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ABSTRACT

The life tables in this report are current life tables for the United States based on age-specific death rates in 1997. Beginning with the 1997 tables, U.S. life tables have been constructed with a new methodology that is similar to that used in the decennial life tables. Life expectancy and other tables are shown for the first time for ages 85 to 100. The report contains life tables by age, race, and sex. In 1997, the overall expectation of life at birth was 76.5 years, an increase of 0.4 years compared with life expectancy in 1996. Life expectancy increased from 1996 to 1997 for each of the four race-sex groups for which life expectancy is reported. Life expectancy increased for black males by 1.1 year (from 66.1 to 67.2), for black females by 0.5 year (from 74.2 to 74.7), for white males by 0.4 year, and for white females by 0.2 year. Technical notes explain the ways the tables were computed. (Contains 12 tables, 3 figures, and 17 references.) (SLD)

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United States Life Tables, 1997

by Robert N. Anderson, Ph.D., Division of Vital Statistics

Abstract

The life tables in this report are current life tables for the United States based on age-specific death rates in 1997. Beginning with 1997 mortality data, complete U.S. life tables were constructed using a new methodology that replaces the abridged life table methodology used previously. The methodology is similar to that used in the decennial life tables. Also, life expectancy and other life table values are shown for ages 85 to 100 years for the first time as part of the annual U.S. life tables. Data used to prepare these life tables are 1997 final mortality statistics; July 1, 1997, population estimates; and data from the Medicare program. Presented are complete life tables by age, race, and sex. In 1997 the overall expectation of life at birth was 76.5 years, an increase of 0.4 years compared with life expectancy in 1996. Life expectancy increased from 1996 to 1997 for each of the four race-sex groups for which life expectancy is reported. Life expectancy increased for black males by 1.1 year (from 66.1 to 67.2), for black females by 0.5 year (from 74.2 to 74.7), for white males by 0.4 year (from 73.9 to 74.3), and for white females by 0.2 year (from 79.7 to 79.9).

Introduction

Death rates for a specific period may be summarized by the life table method to obtain measures of comparative longevity. There are two types of life tables—the generation or cohort life table and the current life table.

The generation life table provides a "longitudinal" perspective in that it follows the mortality experience of a particular cohort, all persons born in the year 1900, for example, from the moment of birth through consecutive ages in successive calendar years. Based on age-specific death rates observed through consecutive calendar years, the generation life table reflects the mortality experience of an actual cohort from birth until no lives remain in the group. To prepare just a single complete generation life table requires data over many years. It is not feasible to construct generation life tables entirely on the basis of actual data for cohorts born in this century (1). It is necessary to project data for the incomplete period for cohorts whose life spans are not yet complete (2).

The better-known current life table may, in contrast, be characterized as "cross-sectional." Unlike the generation life table, the current life table does not represent the mortality experience of an actual cohort. Rather, the current life table considers a hypothetical cohort and assumes that it is subject to the age-specific death rates observed for an actual population during a particular period. Thus, for example, a current life table for 1997 assumes a hypothetical cohort subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 1997. The current life table may thus be characterized as rendering a "snapshot" of current mortality experience, and shows the long-range implications of a set of age-specific death rates that prevailed in a given year. In this report the term "life table" refers only to the current life table and not to the generation life table.

Beginning with 1997 mortality data, complete life tables are constructed using a new methodology (3,4). Previously, the annual life tables were produced using an abridged life table method. Also, life expectancy and other life table values are shown for ages 85 to 100 years for the first time as part of the annual U.S. life tables. Previously, the annual life tables were closed at age 85. Extension of the oldest age interval was implemented by NCHS for several reasons, survival in the United States is such that approximately one-third of the population survives beyond age 85, improvements have occurred in age reporting at older ages, and high quality old-age mortality data are available from the Medicare program.

Data and methods

The data used to prepare the U.S. life tables for 1997 are final mortality statistics for 1997; July 1, 1997, population estimates

Acknowledgments

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prepared by the U.S. Bureau of the Census; and data from the Medicare program prepared by the Health Care Financing Administration. Data from the Medicare program are used to calculate probabilities of dying for ages over 85 years (see Technical notes).

Life tables can be classified in two ways according to the length of the age interval in which data are presented. A complete life table contains data for every single year of age. An abridged life table typically contains data by 5- or 10-year age intervals. U.S. life tables based on data prior to 1997 other than the decennial life tables are abridged life tables constructed by reference to a "standard" table (5). The 1997 U.S. life tables are complete life tables calculated using a method similar to that of the U.S. Decennial Life Tables (3,6). A complete life table, of course, can be aggregated into 5- or 10-year age groups. See Technical notes for more information on the method used to construct the life tables in this report.

Expectation of life—The most frequently used life table statistic is life expectancy (e_x), which is the average number of years of life remaining for persons who have attained a given age (x). Life expectancy and other life table values for each age in 1997 are shown for the total population and by race and sex in tables 1–9.

Life expectancy at birth (e_0) for 1997 for the total population was 76.5 years. This represents the average number of years that the members of the life table cohort may expect to live at the time of birth (table 1).

Survivors to specified ages—Another way of assessing the longevity of the life table cohort is by determining the proportion who survive to specified ages. The l_x column of the life table provides the data for computing the proportion. For instance, 81,510 persons out of the original 1997 life table cohort of 100,000 (or 81.5 percent) were alive at exact age 65 (table 1). In other words, the probability that a person will survive from birth to age 65 is 81.5 percent. Probabilities of survival can be calculated at any age by simply dividing the number of survivors at the terminal age by the number at the beginning age. For example, to calculate the probability of surviving from age 20 to age 85, one would divide the number of survivors at age 85 (34,221) by the number of survivors at age 20 (98,558), which results in a 34.7 percent probability of survival.

Explanation of the columns of the life table

Column 1—Age (x to x + 1)—This column shows the age interval between the two exact ages indicated. For instance, "20–21" means the 1-year interval between the 20th and 21st birthdays.

Column 2—Proportion dying (q_x)—This column shows the proportion of the cohort who are alive at the beginning of an indicated age interval and who will die before reaching the end of that age interval. For example, for males in the age interval 20–21 years, the proportion dying is 0.00136. Out of every 100,000 males alive and exactly 20 years of age at the beginning of the period, 136 will die before reaching their 21st birthday. The "proportion dying" column forms the basis of the life table. The life table is so constructed that all other columns are derived from it.

Column 3—Number surviving (l_x)—This column shows the number of persons, starting with a cohort of 100,000 live births, who survive to the exact age marking the beginning of each age interval. The l_x values are computed from the q_x values, which are successively applied to the remainder of the original 100,000 persons still alive at the beginning of each age interval. Thus out of 100,000 male babies born alive, 99,205 will complete the first year of life and enter the second; 98,947 will reach age 10; 98,293 will reach age 20; and 25,630 will live to age 85.

Column 4—Number dying (d_x)—This column shows the number dying in each successive age interval out of 100,000 live births. Out of 100,000 males born alive, 795 will die in the first year of life; 133 between ages 20 and 21; and 720 will die after reaching age 85. Each figure in column 4 is the difference between two successive figures in column 3.

Columns 5 and 6—Stationary population (L_x and T_x)—Suppose that a group of 100,000 individuals like that assumed in columns 3 and 4 is born every year and that the proportions dying in each such group in each age interval throughout the lives of the members are exactly those shown in column 2. If there were no migration and if the births were evenly distributed over the calendar year, the survivors of these births would make up what is called a stationary population—stationary because in such a population the number of persons living in any given age group would never change. When individuals left the group, either by death or by growing older and entering the next higher age group, their places would immediately be taken by persons entering from the next lower age group. Thus, a census taken at any time in such a stationary community would always show the same total population and the same numerical distribution of that population among the various age groups. In such a stationary population supported by 100,000 annual births, column 3 shows the number of persons who, each year, reach the birthday that marks the beginning of the age interval indicated in column 1, and column 4 shows the number of persons who die each year in the indicated age interval.

Column 5 shows the number of persons in the stationary population in the indicated age interval. For example, the figure given for males in the age interval 20–21 years is 98,226. This means that in a stationary population of males supported by 100,000 annual births and with proportions dying in each age group always in accordance with column 2, a census taken on any date would show 98,226 persons between exact ages 20 and 21 years. This figure also represents the average number of person-years of exposure to the risk of dying during the age interval 20–21 years.

Column 6 shows the total number of persons in the stationary population (column 5) in the indicated age interval and all subsequent age intervals. For example, in the stationary population of males referred to in the last illustration, column 6 shows that there would be at any given moment a total of 5,377,806 persons who have passed their 20th birthday. The male population at all ages 0 and above (the total male population of the stationary community) would be 7,355,907.

Column 7—Average remaining lifetime (e_x)—The average remaining lifetime (also called life expectancy) at any given age is the average number of years remaining to be lived by those surviving to that age on the basis of a given set of age-specific rates of dying. To arrive at this value, it is first necessary to observe that the figures in column 5 of the life table can also be interpreted in terms of a single life table cohort without introducing the concept of the stationary population. From this point of view, each figure in column 5 represents the total time (in years) lived between two indicated birthdays by all those reaching the earlier birthday. Thus, the figure 98,226 for males in the age interval 20–21 is the total number of years lived between the 20th and 21st birthdays by the 98,293 (column 3) males who reached their 20th birthday out of 100,000 males born alive. The corresponding figure 5,377,806 in column 6 is the total number of years lived after

attaining age 20 by the 98,293 reaching that age. This number of years divided by the number of persons (5,377,806 divided by 98,293) gives 54.7 years as the average remaining lifetime of males at age 20.

Results

Life expectancy in the United States

Tables 1–9 show complete life tables by race (white and black) and sex for 1997. Life expectancy at birth for 1997 represents the average number of years that a group of infants would live if the infants were to experience throughout life the age-specific death rates prevailing in 1997. In 1997 life expectancy at birth was 76.5 years, an increase of 0.4 year compared with life expectancy in 1996 and represents a record high for life expectancy in the United States. The increase between 1996 and 1997 represents the continuation of the general upward trend in U.S. life expectancy observed throughout this century (7).

In 1997 life expectancy for females was 79.4 years, an increase of 0.3 year from 1996. Life expectancy was 73.6 years for males, a 0.5-year increase from 1996 to 1997. The difference in life expectancy between the sexes was 5.8 years in 1997, a slight narrowing from the difference (6.0) in the previous year. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.8 years to 7.8 years. The increasing gap during these years is attributed to increases in male mortality due to ischemic heart disease and lung cancer, both of which increased largely as the result of men's early and widespread adoption of cigarette smoking (7,8). Since 1979, the difference in life expectancy between the sexes has narrowed from 7.8 years to 5.8 years, reflecting proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (7,8).

Between 1996 and 1997, life expectancy for the black population rose 0.9 year to 71.1 years. For the white population it increased 0.4 year from 76.8 years to 77.2 years. The difference in life expectancy between the white and black populations was 6.1 years in 1997, a slight narrowing of the gap from 1996 (6.6 years). Although the white-black difference in life expectancy narrowed from 15.8 years in 1900 to 5.7 years in 1982, it increased to 7.1 years in 1993 before declining from 1994 (7.0 years) to 1997 (6.1 years). The increase in the gap from 1983 to 1993 was largely the result of increases in mortality among the black male population due to HIV infection and homicide (7,9).

Among the four race-sex groups (figure 1), white females continued to have the highest life expectancy at birth (79.9 years), followed by black females (74.7 years), white males (74.3 years), and black males (67.2 years). Between 1996 and 1997, life expectancy increased 1.1 year for black males (from 66.1 in 1996 to 67.2 in 1997). Black males experienced an unprecedented decline in life expectancy every year for 1984–89 (9), but annual increases in 1990–92 and 1994–97. From 1996 to 1997, life expectancy for black females rose from 74.2 years to 74.7 years, an increase of 0.5 year. Life expectancy for white males rose 0.4 year, from 73.9 years in 1996 to 74.3 years in 1997. White female life expectancy increased during the same period by 0.2 year from 79.7 years to 79.9 years. Overall, the largest gains in life expectancy between 1980 and 1997 were for white males (3.6 years), followed by black males (3.4 years), black females (2.2 years), and white females (1.8 years).

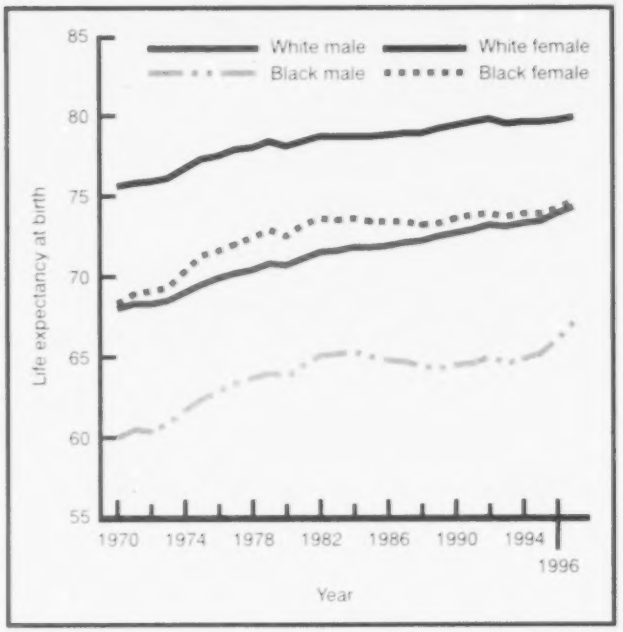

Figure 1. Life expectancy at birth by race and sex: 1970–97

The 1997 life tables may be used to compare life expectancies at any age from birth onward. On the basis of mortality experienced in 1997, a person aged 65 years could expect to live an average of 17.7 more years for a total of 82.7 years, and a person age 100 years could expect to live an additional 2.5 years on average (table 1). Life expectancy at 100 years of age, particularly for the black population, should be interpreted with caution as these figures may be affected somewhat by age misreporting (3,10,11).

Survivorship in the United States

Table 10 shows trends in the number of survivors at each age out of 100,000 persons born alive (l_x). In 1997, 99.3 percent of all infants born in the United States survived the first year of life. In contrast, only 87.6 percent of infants born in 1900 survived the first year. About one-half of the 1997 cohort survived to age 80, the median age at death, and about 1.5 percent survived to age 100. In 1900, the median age at death was 58 and only 0.03 percent survived to age 100.

Among the four race-sex groups (figure 2), white females have the highest median age at death with 50 percent surviving to age 83. Of the original hypothetical cohort of 100,000 infant white females, 99.0 percent survive to age 20, 87.1 percent survive to age 65, and 43.3 percent survive to age 85. For white males and black females, survival is very similar. These groups have the same median age at death of 78 years. White males have slightly higher survival rates than black females at the younger ages with 98.5 percent surviving to age 20 and 78.9 percent surviving to age 65 compared with 98.0 percent and 77.0 percent, respectively, for black females. At the older ages, however, black female survival surpasses white male survival. At age 85, white male survival is 26.5 percent compared with 31.7 percent for black females. This crossover, which occurs at about age 72, is clearly shown in figure 2. The median age at death for black males is 71 years,

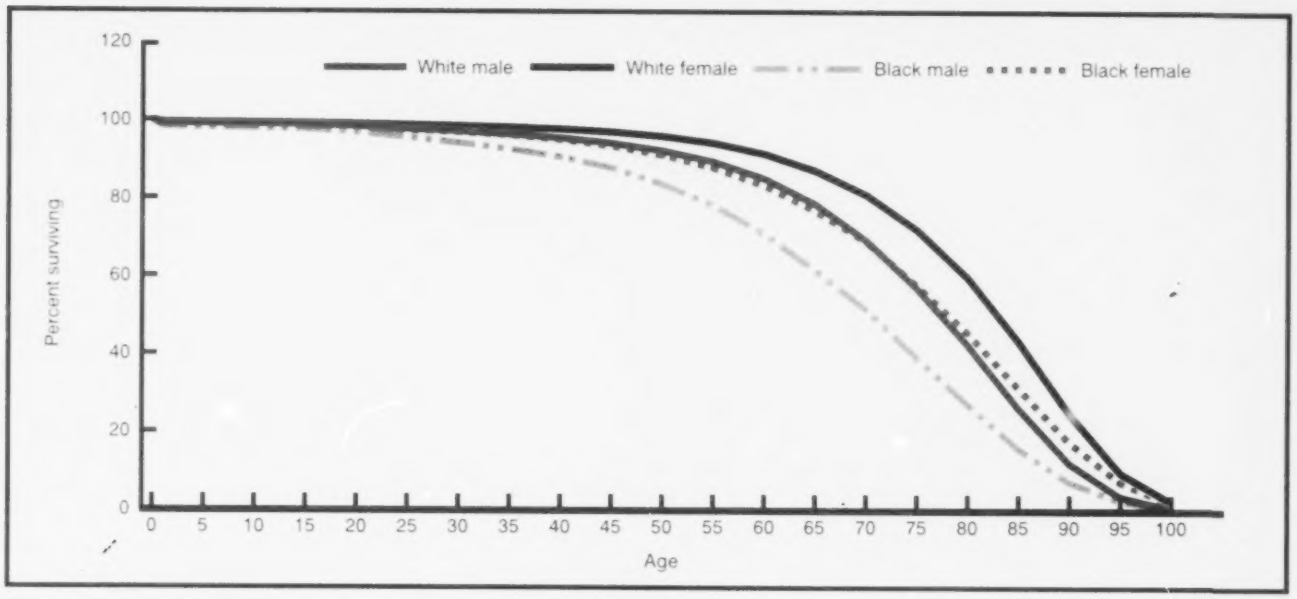

Figure 2. Percent surviving by age, race, and sex: United States, 1997

12 years less than that for white females. Ninety-seven percent of black males survive to age 20, 61.8 percent to age 65, and 16.1 percent to age 85. By age 100, there is very little difference between the white and black populations in terms of survival. About 0.7 percent of white and black males and about 2.2 percent of white and black females survive to age 100.

Plotting the percent surviving by age for the periods 1900–1902, 1949–51, and 1997 shows an increasingly "rectangular" survival curve (figure 3). That is, the survival curve has become increasingly flat in response to progressively lower mortality, particularly at the younger ages, and increasingly vertical at the older ages. The survival curve for 1900–1902 shows a rapid decline in survival in the first few years of life and a relatively steady decline thereafter. In contrast, the survival curve for 1997 is nearly flat until about age 50 after which the decline in survival becomes more rapid. Improvements in survival between 1900–1902 and 1949–51 occurred at all ages, although the largest improvements were among the younger population. Between 1949–51 and 1997, improvements occurred primarily for the older population.

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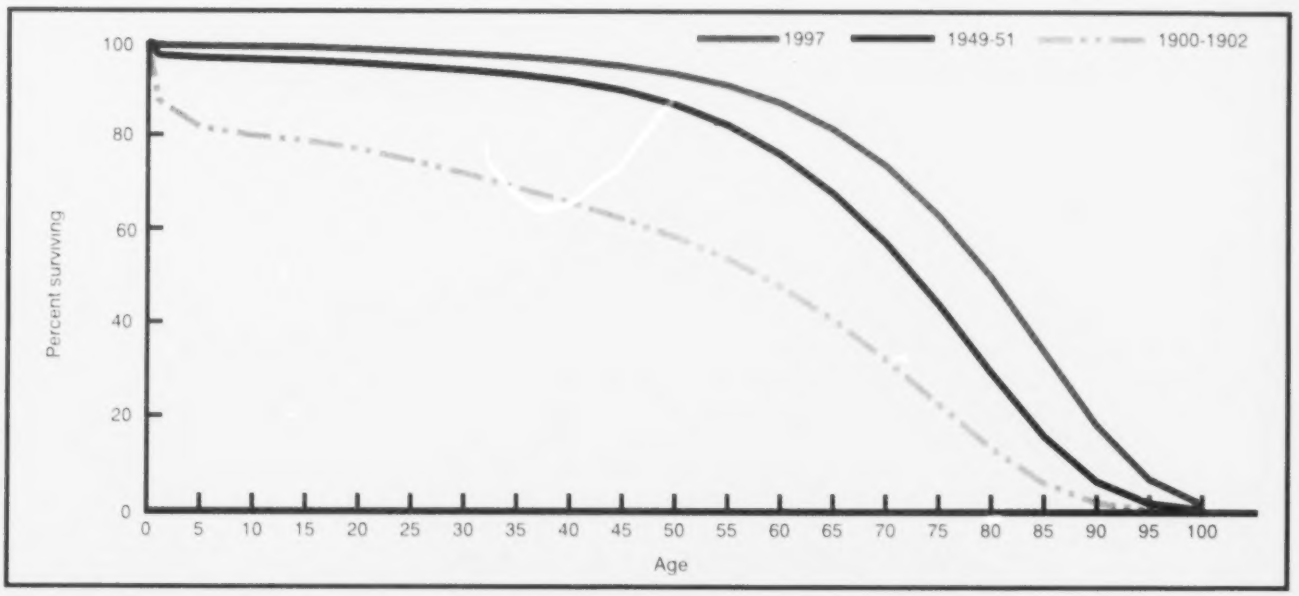

Figure 3. Percent surviving by age: Death-registration States, 1900–1902 and United States, 1949–51 and 1997

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Table 1. Life table for the total population: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.00723	100,000	723	99,371	7,650,789	76.5
1–2	0.00055	99,277	55	99,250	7,551,418	76.1
2–3	0.00036	99,223	36	99,205	7,452,168	75.1
3–4	0.00029	99,187	29	99,172	7,352,963	74.1
4–5	00023	99,158	23	99,146	7,253,791	73.2
5–6	0.00021	99,135	21	99,125	7,154,644	72.2
6–7	0.00020	99,114	20	99,104	7,055,520	71.2
7–8	0.00019	99,094	19	99,085	6,956,416	70.2
8–9	0.00017	99,076	17	99,067	6,857,330	69.2
9–10	0.00015	99,059	15	99,051	6,758,263	68.2
10–11	0.00014	99,043	14	99,037	6,659,212	67.2
11–12	0.00014	99,030	14	99,023	6,560,175	66.2
12–13	0.00019	99,016	19	99,006	6,461,153	65.3
13–14	0.00028	98,997	28	98,983	6,362,147	64.3
14–15	0.00041	98,969	40	98,949	6,263,164	63.3
15–16	0.00055	98,929	54	98,901	6,164,215	62.3
16–17	0.00068	98,874	67	98,841	6,065,313	61.3
17–18	0.00078	98,807	77	98,768	5,966,473	60.4
18–19	0.00085	98,730	84	98,688	5,867,704	59.4
19–20	0.00089	98,646	88	98,602	5,769,016	58.5
20–21	0.00093	98,558	92	98,512	5,670,414	57.5
21–22	0.00098	98,467	96	98,418	5,571,902	56.6
22–23	0.00101	98,370	99	98,321	5,473,483	55.6
23–24	0.00101	98,272	100	98,222	5,375,162	54.7
24–25	0.00101	98,172	99	98,123	5,276,940	53.8
25–26	0.00100	98,073	98	98,024	5,178,818	52.8
26–27	0.00099	97,975	97	97,927	5,080,794	51.9
27–28	0.00100	97,878	98	97,829	4,982,867	50.9
28–29	0.00103	97,780	101	97,730	4,885,037	50.0
29–30	0.00108	97,679	106	97,627	4,787,307	49.0
30–31	0.00114	97,574	111	97,518	4,689,680	48.1
31–32	0.00119	97,463	116	97,405	4,592,162	47.1
32–33	0.00126	97,347	122	97,286	4,494,757	46.2
33–34	0.00133	97,225	129	97,160	4,397,471	45.2
34–35	0.00140	97,096	136	97,027	4,300,311	44.3
35–36	0.00149	96,959	144	96,887	4,203,284	43.4
36–37	0.00157	96,815	152	96,739	4,106,396	42.4
37–38	0.00167	96,663	161	96,582	4,009,657	41.5
38–39	0.00178	96,502	172	96,416	3,913,075	40.5
39–40	0.00192	96,330	185	96,237	3,816,659	39.6
40–41	0.00206	96,145	198	96,046	3,720,422	38.7
41–42	0.00222	95,947	213	95,841	3,624,376	37.8
42–43	0.00239	95,734	229	95,620	3,528,535	36.9
43–44	0.00257	95,506	246	95,383	3,432,915	35.9
44–45	0.00278	95,260	264	95,128	3,337,532	35.0
45–46	0.00300	94,996	285	94,853	3,242,404	34.1
46–47	0.00325	94,710	308	94,556	3,147,551	33.2
47–48	0.00352	94,402	332	94,236	3,052,995	32.3
48–49	0.00380	94,070	358	93,891	2,958,759	31.5
49–50	0.00411	93,712	385	93,519	2,864,868	30.6
50–51	0.00444	93,327	415	93,120	2,771,349	29.7
51–52	0.00482	92,912	448	92,688	2,678,229	28.8
52–53	0.00524	92,464	485	92,221	2,585,541	28.0
53–54	0.00571	91,979	525	91,717	2,493,320	27.1
54–55	0.00623	91,454	570	91,169	2,401,603	26.3
55–56	0.00685	90,884	622	90,573	2,310,434	25.4
56–57	0.00755	90,262	681	89,921	2,219,861	24.6
57–58	0.00833	89,580	746	89,208	2,129,940	23.8
58–59	0.00916	88,835	814	88,428	2,040,733	23.0
59–60	0.01005	88,021	884	87,579	1,952,305	22.2
60–61	0.01101	87,136	959	86,657	1,864,727	21.4
61–62	0.01208	86,177	1,041	85,657	1,778,070	20.6
62–63	0.01321	85,136	1,125	84,574	1,692,413	19.9
63–64	0.01439	84,011	1,209	83,407	1,607,839	19.1
64–65	0.01560	82,802	1,292	82,156	1,524,433	18.4
65–66	0.01679	81,510	1,368	80,826	1,442,277	17.7
66–67	0.01802	80,142	1,444	79,419	1,361,451	17.0

Table 1. Life table for the total population: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.01948	78,697	1,533	77,931	1,282,032	16.3
68–69	0.02127	77,164	1,642	76,343	1,204,101	15.6
69–70	0.02338	75,522	1,765	74,640	1,127,758	14.9
70–71	0.02565	73,757	1,892	72,811	1,053,118	14.3
71–72	0.02799	71,865	2,011	70,859	980,307	13.6
72–73	0.03043	69,854	2,126	68,791	909,447	13.0
73–74	0.03297	67,728	2,233	66,612	840,657	12.4
74–75	0.03563	65,495	2,334	64,328	774,045	11.8
75–76	0.03843	63,162	2,427	61,948	709,716	11.2
76–77	0.04147	60,735	2,519	59,475	647,768	10.7
77–78	0.04494	58,216	2,616	56,908	588,293	10.1
78–79	0.04904	55,600	2,726	54,237	531,385	9.6
79–80	0.05385	52,874	2,847	51,450	477,148	9.0
80–81	0.05938	50,026	2,971	48,541	425,698	8.5
81–82	0.06555	47,055	3,084	45,513	377,158	8.0
82–83	0.07241	43,971	3,184	42,379	331,644	7.5
83–84	0.07990	40,787	3,259	39,158	289,265	7.1
84–85	0.08812	37,528	3,307	35,875	250,107	6.7
85–86	0.09653	34,221	3,303	32,570	214,232	6.3
86–87	0.10556	30,918	3,264	29,286	181,663	5.9
87–88	0.11539	27,654	3,191	26,059	152,376	5.5
88–89	0.12616	24,463	3,086	22,920	126,318	5.2
89–90	0.13802	21,377	2,950	19,902	103,398	4.8
90–91	0.15085	18,427	2,780	17,037	83,496	4.5
91–92	0.16429	15,647	2,571	14,362	66,459	4.2
92–93	0.17813	13,076	2,329	11,912	52,097	4.0
93–94	0.19250	10,747	2,069	9,713	40,186	3.7
94–95	0.20764	8,678	1,802	7,777	30,473	3.5
95–96	0.22354	6,876	1,537	6,108	22,696	3.3
96–97	0.23999	5,339	1,281	4,699	16,588	3.1
97–98	0.25653	4,058	1,041	3,537	11,889	2.9
98–99	0.27295	3,017	823	2,605	8,352	2.8
99–100	0.28915	2,193	634	1,876	5,747	2.6
100+	1.00000	1,559	1,559	3,871	3,871	2.5

Table 2. Life table for males: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.00795	100,000	795	99,311	7,355,907	73.6
1–2	0.00060	99,205	60	99,175	7,256,597	73.1
2–3	0.00041	99,145	40	99,125	7,157,422	72.2
3–4	0.00033	99,105	33	99,089	7,058,296	71.2
4–5	0.00026	99,072	25	99,060	6,959,208	70.2
5–6	0.00023	99,047	23	99,036	6,860,148	69.3
6–7	0.00022	99,024	22	99,013	6,761,112	68.3
7–8	0.00021	99,002	21	98,992	6,662,099	67.3
8–9	0.00019	98,982	19	98,972	6,563,107	66.3
9–10	0.00016	98,963	16	98,955	6,464,134	65.3
10–11	0.00014	98,947	14	98,940	6,365,180	64.3
11–12	0.00015	98,933	15	98,925	6,266,240	63.3
12–13	0.00021	98,918	21	98,908	6,167,314	62.3
13–14	0.00035	98,897	35	98,880	6,068,407	61.4
14–15	0.00054	98,862	53	98,836	5,969,527	60.4
15–16	0.00074	98,809	74	98,772	5,870,691	59.4
16–17	0.00093	98,735	92	98,690	5,771,919	58.5
17–18	0.00109	98,644	107	98,590	5,673,230	57.5
18–19	0.00120	98,536	118	98,477	5,574,640	56.6
19–20	0.00127	98,418	125	98,356	5,476,162	55.6
20–21	0.00135	98,293	133	98,226	5,377,806	54.7
21–22	0.00144	98,160	141	98,089	5,279,580	53.8
22–23	0.00149	98,019	146	97,945	5,181,491	52.9
23–24	0.00150	97,872	147	97,799	5,083,545	51.9
24–25	0.00148	97,725	145	97,653	4,985,746	51.0
25–26	0.00145	97,581	141	97,510	4,888,093	50.1
26–27	0.00142	97,440	139	97,371	4,790,583	49.2
27–28	0.00142	97,301	138	97,232	4,693,212	48.2
28–29	0.00146	97,163	141	97,092	4,595,980	47.3
29–30	0.00151	97,022	147	96,948	4,498,888	46.4
30–31	0.00158	96,875	153	96,798	4,401,939	45.4
31–32	0.00165	96,721	160	96,641	4,305,141	44.5
32–33	0.00173	96,562	167	96,478	4,208,500	43.6
33–34	0.00181	96,395	174	96,308	4,112,022	42.7
34–35	0.00189	96,221	182	96,130	4,015,714	41.7
35–36	0.00198	96,039	190	95,944	3,919,584	40.8
36–37	0.00208	95,849	199	95,749	3,823,640	39.9
37–38	0.00220	95,649	210	95,544	3,727,891	39.0
38–39	0.00234	95,439	223	95,328	3,632,346	38.1
39–40	0.00250	95,216	238	95,097	3,537,018	37.1
40–41	0.00269	94,978	255	94,850	3,441,921	36.2
41–42	0.00289	94,723	273	94,586	3,347,071	35.3
42–43	0.00310	94,449	293	94,303	3,252,485	34.4
43–44	0.00335	94,156	315	93,999	3,158,182	33.5
44–45	0.00361	93,841	339	93,672	3,064,184	32.7
45–46	0.00391	93,502	366	93,319	2,970,512	31.8
46–47	0.00424	93,137	395	92,939	2,877,193	30.9
47–48	0.00458	92,742	424	92,530	2,784,253	30.0
48–49	0.00492	92,318	454	92,091	2,691,723	29.2
49–50	0.00528	91,863	485	91,621	2,599,633	28.3
50–51	0.00567	91,379	518	91,120	2,508,012	27.4
51–52	0.00612	90,860	556	90,582	2,416,892	26.6
52–53	0.00662	90,304	598	90,005	2,326,310	25.8
53–54	0.00719	89,706	645	89,384	2,236,304	24.9
54–55	0.00784	89,062	698	88,713	2,146,920	24.1
55–56	0.00860	88,363	760	87,984	2,058,208	23.3
56–57	0.00947	87,604	830	87,189	1,970,224	22.5
57–58	0.01045	86,774	907	86,320	1,883,036	21.7
58–59	0.01150	85,867	987	85,374	1,796,715	20.9
59–60	0.01262	84,880	1,071	84,344	1,711,342	20.2
60–61	0.01383	83,809	1,159	83,229	1,626,997	19.4
61–62	0.01517	82,649	1,254	82,022	1,543,768	18.7
62–63	0.01663	81,395	1,353	80,719	1,461,746	18.0
63–64	0.01817	80,042	1,455	79,315	1,381,027	17.3
64–65	0.01979	78,587	1,555	77,810	1,301,712	16.6
65–66	0.02137	77,032	1,646	76,209	1,223,902	15.9
66–67	0.02301	75,386	1,734	74,519	1,147,693	15.2

Table 2. Life table for males: United States, 1997—Con.

Age	Proportion dying during age interval q_x	Number living at beginning of age interval l_x	Number dying during age interval d_x	Stationary population in the age interval L_x	Stationary population in this and all subsequent age intervals T_x	Life expectancy at beginning of age interval e_x
67–68	0.02490	73,651	1,834	72,734	1,073,175	14.6
68–69	0.02718	71,818	1,952	70,842	1,000,440	13.9
69–70	0.02985	69,865	2,086	68,823	929,599	13.3
70–71	0.03275	67,780	2,220	66,670	860,776	12.7
71–72	0.03573	65,560	2,342	64,389	794,106	12.1
72–73	0.03882	63,218	2,454	61,991	729,717	11.5
73–74	0.04200	60,763	2,552	59,487	667,727	11.0
74–75	0.04527	58,212	2,635	56,894	608,239	10.4
75–76	0.04869	55,576	2,706	54,223	551,345	9.9
76–77	0.05238	52,870	2,770	51,485	497,122	9.4
77–78	0.05656	50,101	2,834	48,684	445,637	8.9
78–79	0.06149	47,267	2,906	45,814	396,953	8.4
79–80	0.06734	44,361	2,987	42,867	351,139	7.9
80–81	0.07432	41,374	3,075	39,836	308,272	7.5
81–82	0.08227	38,299	3,151	36,723	268,436	7.0
82–83	0.09093	35,148	3,196	33,550	231,713	6.6
83–84	0.09981	31,952	3,189	30,357	198,163	6.2
84–85	0.10893	28,763	3,133	27,196	167,806	5.8
85–86	0.11874	25,630	3,043	24,108	140,610	5.5
86–87	0.12892	22,586	2,912	21,130	116,502	5.2
87–88	0.13988	19,675	2,752	18,298	95,372	4.8
88–89	0.15177	16,922	2,568	15,638	77,073	4.6
89–90	0.16461	14,354	2,363	13,173	61,435	4.3
90–91	0.17823	11,991	2,137	10,923	48,262	4.0
91–92	0.19237	9,854	1,896	8,906	37,339	3.8
92–93	0.20676	7,958	1,645	7,136	28,433	3.6
93–94	0.22133	6,313	1,397	5,614	21,297	3.4
94–95	0.23603	4,916	1,160	4,336	15,683	3.2
95–96	0.25091	3,755	942	3,284	11,347	3.0
96–97	0.26594	2,813	748	2,439	8,063	2.9
97–98	0.28103	2,065	580	1,775	5,624	2.7
98–99	0.29615	1,485	440	1,265	3,849	2.6
99–100	0.31127	1,045	325	882	2,584	2.5
100+	1.00000	720	720	1,702	1,702	2.4

Table 3. Life table for females: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.00617	100,000	617	99,465	7,936,415	79.4
1–2	0.00050	99,383	50	99,358	7,836,950	78.9
2–3	0.00032	99,333	32	99,317	7,737,592	77.9
3–4	0.00025	99,302	25	99,289	7,638,274	76.9
4–5	0.00020	99,276	20	99,266	7,538,985	75.9
5–6	0.00019	99,256	19	99,247	7,439,719	75.0
6–7	0.00018	99,238	17	99,229	7,340,472	74.0
7–8	0.00017	99,220	16	99,212	7,241,243	73.0
8–9	0.00015	99,204	15	99,196	7,142,031	72.0
9–10	0.00014	99,188	14	99,181	7,042,835	71.0
10–11	0.00014	99,174	13	99,167	6,943,654	70.0
11–12	0.00014	99,161	14	99,154	6,844,486	69.0
12–13	0.00016	99,147	16	99,139	6,745,333	68.0
13–14	0.00021	99,131	21	99,121	6,646,194	67.0
14–15	0.00027	99,110	27	99,097	6,547,073	66.1
15–16	0.00034	99,083	34	99,066	6,447,977	65.1
16–17	0.00041	99,049	41	99,029	6,348,910	64.1
17–18	0.00046	99,009	45	98,986	6,249,881	63.1
18–19	0.00048	98,963	47	98,940	6,150,895	62.2
19–20	0.00048	98,916	48	98,892	6,051,956	61.2
20–21	0.00048	98,868	47	98,845	5,953,063	60.2
21–22	0.00048	98,821	48	98,797	5,854,219	59.2
22–23	0.00049	98,773	49	98,749	5,755,421	58.3
23–24	0.00050	98,725	50	98,700	5,656,672	57.3
24–25	0.00052	98,675	51	98,650	5,557,972	56.3
25–26	0.00054	98,624	53	98,598	5,459,323	55.4
26–27	0.00055	98,571	55	98,544	5,360,725	54.4
27–28	0.00058	98,517	57	98,488	5,262,181	53.4
28–29	0.00061	98,460	60	98,430	5,163,693	52.4
29–30	0.00065	98,400	64	98,368	5,065,264	51.5
30–31	0.00069	98,336	68	98,302	4,966,896	50.5
31–32	0.00074	98,268	72	98,232	4,868,594	49.5
32–33	0.00079	98,196	77	98,157	4,770,362	48.6
33–34	0.00085	98,118	84	98,076	4,672,205	47.6
34–35	0.00092	98,035	90	97,990	4,574,129	46.7
35–36	0.00099	97,945	97	97,896	4,476,139	45.7
36–37	0.00107	97,847	104	97,795	4,378,243	44.7
37–38	0.00115	97,743	112	97,687	4,280,448	43.8
38–39	0.00123	97,631	120	97,571	4,182,761	42.8
39–40	0.00133	97,511	130	97,446	4,085,190	41.9
40–41	0.00144	97,381	140	97,311	3,987,744	40.9
41–42	0.00156	97,241	151	97,165	3,890,433	40.0
42–43	0.00168	97,089	163	97,008	3,793,268	39.1
43–44	0.00182	96,926	176	96,838	3,696,261	38.1
44–45	0.00196	96,750	190	96,655	3,599,422	37.2
45–46	0.00212	96,561	205	96,458	3,502,767	36.3
46–47	0.00230	96,356	222	96,245	3,406,308	35.4
47–48	0.00250	96,134	241	96,014	3,310,063	34.4
48–49	0.00273	95,894	262	95,763	3,214,049	33.5
49–50	0.00298	95,632	285	95,489	3,118,287	32.6
50–51	0.00327	95,346	312	95,191	3,022,798	31.7
51–52	0.00359	95,035	341	94,864	2,927,607	30.8
52–53	0.00393	94,694	373	94,507	2,832,743	29.9
53–54	0.00431	94,321	406	94,118	2,738,236	29.0
54–55	0.00472	93,915	443	93,693	2,644,118	28.2
55–56	0.00520	93,471	486	93,228	2,550,425	27.3
56–57	0.00576	92,985	535	92,717	2,457,197	26.4
57–58	0.00637	92,449	589	92,155	2,364,480	25.6
58–59	0.00701	91,861	644	91,539	2,272,325	24.7
59–60	0.00769	91,217	702	90,866	2,180,786	23.9
60–61	0.00844	90,515	764	90,133	2,089,920	23.1
61–62	0.00928	89,751	833	89,335	1,999,787	22.3
62–63	0.01015	88,918	903	88,467	1,910,452	21.5
63–64	0.01103	88,016	971	87,530	1,821,985	20.7
64–65	0.01193	87,044	1,038	86,525	1,734,455	19.9
65–66	0.01280	86,006	1,101	85,456	1,647,930	19.2
66–67	0.01375	84,905	1,167	84,322	1,562,474	18.4

Table 3. Life table for females: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.01490	83,738	1,247	83,114	1,478,153	17.7
68–69	0.01634	82,491	1,348	81,817	1,395,038	16.9
69–70	0.01806	81,142	1,466	80,410	1,313,222	16.2
70–71	0.01993	79,677	1,588	78,883	1,232,812	15.5
71–72	0.02187	78,089	1,707	77,235	1,153,929	14.8
72–73	0.02391	76,381	1,827	75,468	1,076,694	14.1
73–74	0.02607	74,555	1,944	73,583	1,001,226	13.4
74–75	0.02838	72,611	2,061	71,580	927,644	12.8
75–76	0.03083	70,550	2,175	69,462	856,063	12.1
76–77	0.03353	68,375	2,293	67,228	786,601	11.5
77–78	0.03666	66,082	2,423	64,871	719,372	10.9
78–79	0.04041	63,659	2,573	62,373	654,501	10.3
79–80	0.04483	61,087	2,738	59,718	592,128	9.7
80–81	0.04978	58,348	2,905	56,896	532,411	9.1
81–82	0.05526	55,444	3,064	53,912	475,515	8.6
82–83	0.06152	52,380	3,223	50,769	421,603	8.0
83–84	0.06872	49,158	3,378	47,468	370,834	7.5
84–85	0.07692	45,779	3,521	44,019	323,365	7.1
85–86	0.08526	42,258	3,603	40,456	279,347	6.6
86–87	0.09454	38,655	3,654	36,828	238,890	6.2
87–88	0.10466	35,000	3,663	33,169	202,062	5.8
88–89	0.11573	31,337	3,627	29,524	168,894	5.4
89–90	0.12789	27,711	3,544	25,939	139,369	5.0
90–91	0.14105	24,167	3,409	22,462	113,431	4.7
91–92	0.15496	20,758	3,217	19,150	90,968	4.4
92–93	0.16946	17,541	2,973	16,055	71,819	4.1
93–94	0.18463	14,569	2,690	13,224	55,764	3.8
94–95	0.20067	11,879	2,384	10,687	42,540	3.6
95–96	0.21749	9,495	2,065	8,463	31,853	3.4
96–97	0.23482	7,430	1,745	6,558	23,390	3.1
97–98	0.25230	5,685	1,434	4,968	16,832	3.0
98–99	0.26968	4,251	1,146	3,678	11,864	2.8
99–100	0.28688	3,105	891	2,659	8,186	2.6
100+	1.00000	2,214	2,214	5,527	5,527	2.5

Table 4. Life table for the white population: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.00603	100,000	603	99,475	7,714,641	77.1
1–2	0.00049	99,397	49	99,373	7,615,166	76.6
2–3	0.00032	99,348	32	99,333	7,515,793	75.7
3–4	0.00026	99,317	26	99,304	7,416,460	74.7
4–5	0.00020	99,291	20	99,281	7,317,157	73.7
5–6	0.00018	99,271	18	99,262	7,217,875	72.7
6–7	0.00017	99,253	17	99,244	7,118,613	71.7
7–8	0.00016	99,236	16	99,228	7,019,369	70.7
8–9	0.00015	99,220	15	99,212	6,920,141	69.7
9–10	0.00014	99,204	14	99,198	6,820,929	68.8
10–11	0.00013	99,191	13	99,184	6,721,732	67.8
11–12	0.00013	99,178	13	99,172	6,622,547	66.8
12–13	0.00018	99,165	18	99,156	6,523,376	65.8
13–14	0.00027	99,147	26	99,134	6,424,219	64.8
14–15	0.00039	99,121	38	99,102	6,325,085	63.8
15–16	0.00052	99,083	51	99,057	6,225,983	62.8
16–17	0.00064	99,031	63	99,000	6,126,926	61.9
17–18	0.00073	98,968	72	98,932	6,027,927	60.9
18–19	0.00078	98,896	78	98,857	5,928,994	60.0
19–20	0.00081	98,818	80	98,778	5,830,137	59.0
20–21	0.00083	98,739	82	98,698	5,731,359	58.0
21–22	0.00086	98,656	85	98,614	5,632,661	57.1
22–23	0.00087	98,572	86	98,529	5,534,047	56.1
23–24	0.00088	98,486	86	98,443	5,435,518	55.2
24–25	0.00087	98,399	86	98,357	5,337,076	54.2
25–26	0.00086	98,314	85	98,272	5,238,719	53.3
26–27	0.00086	98,229	84	98,187	5,140,448	52.3
27–28	0.00087	98,145	85	98,103	5,042,260	51.4
28–29	0.00090	98,060	88	98,016	4,944,158	50.4
29–30	0.00094	97,972	92	97,926	4,846,141	49.5
30–31	0.00100	97,880	97	97,831	4,748,215	48.5
31–32	0.00105	97,783	103	97,731	4,650,384	47.6
32–33	0.00111	97,680	108	97,626	4,552,653	46.6
33–34	0.00117	97,572	114	97,515	4,455,027	45.7
34–35	0.00123	97,458	120	97,397	4,357,512	44.7
35–36	0.00130	97,337	126	97,274	4,260,115	43.8
36–37	0.00137	97,211	133	97,144	4,162,841	42.8
37–38	0.00146	97,078	141	97,007	4,065,696	41.9
38–39	0.00156	96,936	151	96,861	3,968,689	40.9
39–40	0.00168	96,786	162	96,704	3,871,828	40.0
40–41	0.00181	96,623	175	96,536	3,775,124	39.1
41–42	0.00195	96,449	188	96,354	3,678,588	38.1
42–43	0.00211	96,260	203	96,159	3,582,233	37.2
43–44	0.00227	96,058	218	95,949	3,486,074	36.3
44–45	0.00244	95,840	234	95,723	3,390,126	35.4
45–46	0.00264	95,606	252	95,480	3,294,403	34.5
46–47	0.00285	95,354	272	95,218	3,198,923	33.5
47–48	0.00310	95,082	295	94,934	3,103,706	32.6
48–49	0.00338	94,787	320	94,627	3,008,772	31.7
49–50	0.00368	94,467	348	94,293	2,914,145	30.8
50–51	0.00402	94,119	379	93,930	2,819,851	30.0
51–52	0.00440	93,741	413	93,534	2,725,922	29.1
52–53	0.00481	93,328	449	93,103	2,632,387	28.2
53–54	0.00525	92,879	488	92,635	2,539,284	27.3
54–55	0.00574	92,391	531	92,126	2,446,649	26.5
55–56	0.00633	91,860	581	91,570	2,354,524	25.6
56–57	0.00701	91,279	639	90,959	2,262,954	24.8
57–58	0.00776	90,640	703	90,288	2,171,995	24.0
58–59	0.00856	89,937	770	89,552	2,081,706	23.1
59–60	0.00940	89,167	838	88,748	1,992,155	22.3
60–61	0.01032	88,328	912	87,873	1,903,407	21.5
61–62	0.01135	87,417	992	86,921	1,815,535	20.8
62–63	0.01248	86,425	1,078	85,885	1,728,614	20.0
63–64	0.01368	85,346	1,168	84,762	1,642,729	19.2
64–65	0.01495	84,178	1,259	83,549	1,557,966	18.5
65–66	0.01621	82,920	1,344	82,248	1,474,417	17.8
66–67	0.01751	81,576	1,428	80,862	1,392,170	17.1

Table 4. Life table for the white population: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.01900	80,147	1,523	79,386	1,311,308	16.4
68–69	0.02077	78,625	1,633	77,808	1,231,922	15.7
69–70	0.02281	76,992	1,756	76,114	1,154,114	15.0
70–71	0.02498	75,236	1,879	74,296	1,078,000	14.3
71–72	0.02722	73,356	1,997	72,358	1,003,704	13.7
72–73	0.02961	71,360	2,113	70,303	931,346	13.1
73–74	0.03216	69,247	2,227	68,133	861,042	12.4
74–75	0.03490	67,020	2,339	65,850	792,909	11.8
75–76	0.03780	64,681	2,445	63,458	727,059	11.2
76–77	0.04094	62,235	2,548	60,961	663,601	10.7
77–78	0.04449	59,688	2,656	58,360	602,639	10.1
78–79	0.04866	57,032	2,775	55,644	544,280	9.5
79–80	0.05352	54,257	2,904	52,805	488,635	9.0
80–81	0.05908	51,353	3,034	49,836	435,830	8.5
81–82	0.06529	48,319	3,155	46,742	385,994	8.0
82–83	0.07220	45,164	3,261	43,534	339,253	7.5
83–84	0.07977	41,903	3,343	40,232	295,719	7.1
84–85	0.08811	38,561	3,397	36,862	255,487	6.6
85–86	0.09666	35,163	3,399	33,464	218,625	6.2
86–87	0.10584	31,765	3,362	30,084	185,161	5.8
87–88	0.11586	28,403	3,291	26,757	155,077	5.5
88–89	0.12688	25,112	3,186	23,519	128,320	5.1
89–90	0.13904	21,926	3,049	20,401	104,801	4.8
90–91	0.15221	18,877	2,873	17,441	84,400	4.5
91–92	0.16603	16,004	2,657	14,675	66,959	4.2
92–93	0.18033	13,347	2,407	12,143	52,284	3.9
93–94	0.19524	10,940	2,136	9,872	40,140	3.7
94–95	0.21098	8,804	1,858	7,875	30,268	3.4
95–96	0.22752	6,947	1,580	6,156	22,393	3.2
96–97	0.24458	5,366	1,312	4,710	16,237	3.0
97–98	0.26173	4,054	1,061	3,523	11,527	2.8
98–99	0.27873	2,993	834	2,576	8,004	2.7
99–100	0.29554	2,159	638	1,840	5,428	2.5
100+	1.00000	1,521	1,521	3,589	3,589	2.4

Table 5. Life table for white males: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.00667	100,000	667	99,422	7,430,189	74.3
1–2	0.00053	99,333	53	99,307	7,330,767	73.8
2–3	0.00036	99,280	36	99,262	7,231,460	72.8
3–4	0.00029	99,244	28	99,230	7,132,197	71.9
4–5	0.00023	99,216	23	99,205	7,032,967	70.9
5–6	0.00020	99,193	20	99,183	6,933,762	69.9
6–7	0.00019	99,173	19	99,163	6,834,579	68.9
7–8	0.00019	99,154	19	99,145	6,735,416	67.9
8–9	0.00017	99,135	17	99,127	6,636,271	66.9
9–10	0.00015	99,118	15	99,111	6,537,145	66.0
10–11	0.00013	99,103	13	99,097	6,438,034	65.0
11–12	0.00014	99,090	14	99,083	6,338,937	64.0
12–13	0.00020	99,076	20	99,066	6,239,854	63.0
13–14	0.00033	99,055	33	99,039	6,140,789	62.0
14–15	0.00050	99,023	49	98,998	6,041,750	61.0
15–16	0.00068	98,973	68	98,940	5,942,752	60.0
16–17	0.00085	98,906	84	98,864	5,843,812	59.1
17–18	0.00099	98,821	97	98,773	5,744,949	58.1
18–19	0.00107	98,724	106	98,671	5,646,176	57.2
19–20	0.00113	98,618	111	98,562	5,547,505	56.3
20–21	0.00118	98,507	116	98,448	5,448,943	55.3
21–22	0.00124	98,390	122	98,329	5,350,495	54.4
22–23	0.00128	98,268	125	98,205	5,252,166	53.4
23–24	0.00128	98,142	126	98,080	5,153,960	52.5
24–25	0.00126	98,017	124	97,955	5,055,881	51.6
25–26	0.00124	97,893	121	97,832	4,957,926	50.6
26–27	0.00122	97,772	119	97,712	4,860,094	49.7
27–28	0.00122	97,653	120	97,593	4,762,382	48.8
28–29	0.00126	97,533	123	97,471	4,664,789	47.8
29–30	0.00132	97,410	129	97,345	4,567,317	46.9
30–31	0.00139	97,281	136	97,213	4,469,972	45.9
31–32	0.00146	97,145	142	97,074	4,372,759	45.0
32–33	0.00153	97,003	149	96,929	4,275,684	44.1
33–34	0.00160	96,855	155	96,777	4,178,755	43.1
34–35	0.00168	96,699	162	96,618	4,081,978	42.2
35–36	0.00175	96,537	169	96,453	3,985,360	41.3
36–37	0.00183	96,368	177	96,280	3,888,907	40.4
37–38	0.00194	96,192	186	96,099	3,792,627	39.4
38–39	0.00206	96,006	198	95,907	3,696,528	38.5
39–40	0.00221	95,808	212	95,702	3,600,622	37.6
40–41	0.00238	95,595	228	95,482	3,504,920	36.7
41–42	0.00256	95,368	245	95,245	3,409,439	35.8
42–43	0.00276	95,123	262	94,992	3,314,193	34.8
43–44	0.00297	94,861	281	94,720	3,219,201	33.9
44–45	0.00319	94,579	302	94,428	3,124,481	33.0
45–46	0.00344	94,278	324	94,115	3,030,053	32.1
46–47	0.00372	93,953	349	93,779	2,935,937	31.2
47–48	0.00402	93,604	377	93,416	2,842,159	30.4
48–49	0.00435	93,227	406	93,024	2,748,743	29.5
49–50	0.00471	92,821	437	92,603	2,655,719	28.6
50–51	0.00512	92,384	473	92,148	2,563,116	27.7
51–52	0.00557	91,911	511	91,655	2,470,968	26.9
52–53	0.00605	91,400	553	91,123	2,379,313	26.0
53–54	0.00659	90,847	598	90,548	2,288,190	25.2
54–55	0.00719	90,248	649	89,924	2,197,642	24.4
55–56	0.00790	89,600	708	89,245	2,107,718	23.5
56–57	0.00874	88,891	777	88,503	2,018,473	22.7
57–58	0.00968	88,114	853	87,688	1,929,970	21.9
58–59	0.01068	87,262	932	86,796	1,842,282	21.1
59–60	0.01176	86,329	1,015	85,822	1,755,486	20.3
60–61	0.01291	85,314	1,102	84,764	1,669,664	19.6
61–62	0.01420	84,213	1,196	83,615	1,584,901	18.8
62–63	0.01565	83,017	1,299	82,367	1,501,286	18.1
63–64	0.01724	81,718	1,409	81,013	1,418,919	17.4
64–65	0.01894	80,309	1,521	79,549	1,337,906	16.7
65–66	0.02063	78,788	1,625	77,976	1,258,357	16.0
66–67	0.02235	77,163	1,725	76,301	1,180,381	15.3

Table 5. Life table for white males: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.02430	75,438	1,833	74,522	1,104,081	14.6
68–69	0.02659	73,605	1,957	72,627	1,029,559	14.0
69–70	0.02920	71,648	2,092	70,602	956,932	13.4
70–71	0.03200	69,556	2,226	68,443	886,330	12.7
71–72	0.03489	67,330	2,349	66,155	817,887	12.1
72–73	0.03792	64,981	2,464	63,749	751,732	11.6
73–74	0.04110	62,517	2,570	61,232	687,983	11.0
74–75	0.04445	59,947	2,665	58,615	626,751	10.5
75–76	0.04796	57,282	2,747	55,909	568,136	9.9
76–77	0.05174	54,535	2,822	53,124	512,227	9.4
77–78	0.05601	51,713	2,896	50,265	459,103	8.9
78–79	0.06103	48,817	2,980	47,327	408,838	8.4
79–80	0.06699	45,838	3,071	44,302	361,511	7.9
80–81	0.07408	42,767	3,168	41,183	317,208	7.4
81–82	0.08216	39,599	3,254	37,972	276,025	7.0
82–83	0.09094	36,345	3,305	34,693	238,053	6.5
83–84	0.09993	33,040	3,302	31,389	203,361	6.2
84–85	0.10919	29,738	3,247	28,115	171,972	5.8
85–86	0.11925	26,491	3,159	24,912	143,857	5.4
86–87	0.12973	23,332	3,027	21,819	118,945	5.1
87–88	0.14100	20,305	2,863	18,874	97,127	4.8
88–89	0.15323	17,442	2,673	16,106	78,253	4.5
89–90	0.16647	14,769	2,459	13,540	62,147	4.2
90–91	0.18057	12,311	2,223	11,199	48,607	3.9
91–92	0.19528	10,088	1,970	9,103	37,408	3.7
92–93	0.21039	8,118	1,708	7,264	28,305	3.5
93–94	0.22584	6,410	1,448	5,686	21,041	3.3
94–95	0.24161	4,962	1,199	4,363	15,355	3.1
95–96	0.25765	3,763	970	3,279	10,992	2.9
96–97	0.27384	2,794	765	2,411	7,713	2.8
97–98	0.29004	2,029	588	1,735	5,302	2.6
98–99	0.30617	1,440	441	1,220	3,567	2.5
99–100	0.32222	999	322	838	2,348	2.3
100+	1.00000	677	677	1,509	1,509	2.2

Table 6. Life table for white females: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.00536	100,000	536	99,530	7,988,994	79.9
1–2	0.00045	99,464	44	99,442	7,889,463	79.3
2–3	0.00027	99,420	27	99,406	7,790,021	78.4
3–4	0.00023	99,393	23	99,381	7,690,615	77.4
4–5	0.00017	99,370	17	99,361	7,591,234	76.4
5–6	0.00016	99,353	16	99,345	7,491,872	75.4
6–7	0.00015	99,337	15	99,330	7,392,527	74.4
7–8	0.00014	99,322	14	99,315	7,293,198	73.4
8–9	0.00013	99,308	13	99,302	7,193,883	72.4
9–10	0.00012	99,295	12	99,289	7,094,581	71.4
10–11	0.00012	99,283	12	99,277	6,995,292	70.5
11–12	0.00012	99,271	12	99,265	6,896,016	69.5
12–13	0.00015	99,259	15	99,251	6,796,751	68.5
13–14	0.00020	99,244	20	99,234	6,697,500	67.5
14–15	0.00026	99,224	26	99,211	6,598,266	66.5
15–16	0.00034	99,198	34	99,181	6,499,055	65.5
16–17	0.00041	99,164	41	99,144	6,399,874	64.5
17–18	0.00046	99,124	45	99,101	6,300,730	63.6
18–19	0.00047	99,078	47	99,055	6,201,629	62.6
19–20	0.00046	99,032	46	99,009	6,102,574	61.6
20–21	0.00045	98,986	45	98,963	6,003,565	60.7
21–22	0.00045	98,941	44	98,919	5,904,602	59.7
22–23	0.00044	98,897	44	98,875	5,805,683	58.7
23–24	0.00045	98,853	44	98,831	5,706,808	57.7
24–25	0.00046	98,809	45	98,787	5,607,977	56.8
25–26	0.00047	98,764	46	98,741	5,509,190	55.8
26–27	0.00048	98,718	47	98,695	5,410,449	54.8
27–28	0.00050	98,671	49	98,646	5,311,754	53.8
28–29	0.00052	98,622	52	98,596	5,213,108	52.9
29–30	0.00056	98,570	55	98,543	5,114,512	51.9
30–31	0.00059	98,516	58	98,486	5,015,969	50.9
31–32	0.00063	98,457	62	98,426	4,917,482	49.9
32–33	0.00068	98,395	67	98,362	4,819,056	49.0
33–34	0.00073	98,329	71	98,293	4,720,695	48.0
34–35	0.00078	98,257	77	98,219	4,622,402	47.0
35–36	0.00084	98,180	82	98,139	4,524,183	46.1
36–37	0.00090	98,098	88	98,054	4,426,044	45.1
37–38	0.00097	98,010	95	97,962	4,327,990	44.2
38–39	0.00104	97,915	102	97,864	4,230,028	43.2
39–40	0.00113	97,813	111	97,757	4,132,164	42.2
40–41	0.00123	97,702	120	97,642	4,034,407	41.3
41–42	0.00134	97,582	130	97,517	3,936,765	40.3
42–43	0.00145	97,452	141	97,381	3,839,248	39.4
43–44	0.00157	97,310	153	97,234	3,741,867	38.5
44–45	0.00169	97,158	165	97,076	3,644,633	37.5
45–46	0.00183	96,993	178	96,904	3,547,557	36.6
46–47	0.00200	96,815	193	96,719	3,450,653	35.6
47–48	0.00219	96,622	211	96,517	3,353,934	34.7
48–49	0.00241	96,411	232	96,295	3,257,418	33.8
49–50	0.00267	96,179	256	96,050	3,161,123	32.9
50–51	0.00296	95,922	284	95,780	3,065,072	32.0
51–52	0.00327	95,639	313	95,482	2,969,292	31.0
52–53	0.00361	95,326	344	95,154	2,873,810	30.1
53–54	0.00396	94,982	377	94,793	2,778,656	29.3
54–55	0.00436	94,605	412	94,399	2,683,863	28.4
55–56	0.00482	94,193	454	93,966	2,589,464	27.5
56–57	0.00536	93,739	502	93,488	2,495,498	26.6
57–58	0.00595	93,237	554	92,960	2,402,010	25.8
58–59	0.00656	92,683	608	92,379	2,309,050	24.9
59–60	0.00720	92,075	663	91,743	2,216,672	24.1
60–61	0.00791	91,412	723	91,050	2,124,929	23.2
61–62	0.00871	90,689	790	90,294	2,033,879	22.4
62–63	0.00956	89,899	860	89,469	1,943,585	21.6
63–64	0.01045	89,039	931	88,574	1,854,116	20.8
64–65	0.01137	88,109	1,002	87,607	1,765,542	20.0
65–66	0.01229	87,106	1,071	86,571	1,677,934	19.3
66–67	0.01327	86,036	1,142	85,465	1,591,363	18.5

Table 6. Life table for white females: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.01443	84,894	1,225	84,281	1,505,898	17.7
68–69	0.01584	83,669	1,325	83,006	1,421,617	17.0
69–70	0.01748	82,344	1,439	81,624	1,338,610	16.3
70–71	0.01924	80,905	1,557	80,126	1,256,986	15.5
71–72	0.02108	79,348	1,673	78,512	1,176,860	14.8
72–73	0.02307	77,675	1,792	76,779	1,098,348	14.1
73–74	0.02526	75,883	1,916	74,925	1,021,569	13.5
74–75	0.02765	73,967	2,045	72,944	946,644	12.8
75–76	0.03021	71,921	2,173	70,835	873,700	12.1
76–77	0.03301	69,748	2,302	68,597	802,866	11.5
77–78	0.03623	67,446	2,443	66,224	734,269	10.9
78–79	0.04002	65,002	2,602	63,702	668,044	10.3
79–80	0.04445	62,401	2,774	61,014	604,343	9.7
80–81	0.04939	59,627	2,945	58,155	543,329	9.1
81–82	0.05485	56,683	3,109	55,128	485,174	8.6
82–83	0.06114	53,573	3,275	51,936	430,046	8.0
83–84	0.06841	50,298	3,441	48,578	378,110	7.5
84–85	0.07675	46,857	3,596	45,059	329,533	7.0
85–86	0.08519	43,261	3,685	41,419	284,473	6.6
86–87	0.09458	39,576	3,743	37,704	243,055	6.1
87–88	0.10486	35,833	3,757	33,954	205,351	5.7
88–89	0.11617	32,075	3,726	30,212	171,397	5.3
89–90	0.12858	28,349	3,645	26,526	141,185	5.0
90–91	0.14204	24,704	3,509	22,949	114,658	4.6
91–92	0.15629	21,195	3,313	19,539	91,709	4.3
92–93	0.17118	17,882	3,061	16,352	72,170	4.0
93–94	0.18680	14,821	2,769	13,437	55,818	3.8
94–95	0.20327	12,053	2,450	10,828	42,381	3.5
95–96	0.22053	9,603	2,118	8,544	31,553	3.3
96–97	0.23833	7,485	1,784	6,593	23,009	3.1
97–98	0.25630	5,701	1,461	4,971	16,416	2.9
98–99	0.27425	4,240	1,163	3,659	11,445	2.7
99–100	0.29213	3,077	899	2,628	7,787	2.5
100+	1.00000	2,178	2,178	5,159	5,159	2.4

Table 7. Life table for the black population: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.01418	100,000	1,418	98,768	7,107,912	71.1
1–2	0.00092	98,582	91	98,536	7,009,144	71.1
2–3	0.00062	98,491	61	98,460	6,910,608	70.2
3–4	0.00049	98,429	48	98,406	6,812,148	69.2
4–5	0.00036	98,382	35	98,364	6,713,742	68.2
5–6	0.00036	98,347	35	98,329	6,615,378	67.3
6–7	0.00033	98,311	32	98,295	6,517,049	66.3
7–8	0.00031	98,279	30	98,264	6,418,754	65.3
8–9	0.00027	98,249	27	98,236	6,320,490	64.3
9–10	0.00024	98,222	23	98,210	6,222,254	63.3
10–11	0.00021	98,199	20	98,189	6,124,044	62.4
11–12	0.00020	98,179	20	98,169	6,025,855	61.4
12–13	0.00026	98,159	25	98,146	5,927,687	60.4
13–14	0.00038	98,134	38	98,115	5,829,541	59.4
14–15	0.00056	98,096	55	98,068	5,731,426	58.4
15–16	0.00075	98,041	74	98,004	5,633,358	57.5
16–17	0.00093	97,967	91	97,921	5,535,354	56.5
17–18	0.00110	97,876	107	97,822	5,437,432	55.6
18–19	0.00124	97,768	121	97,708	5,339,610	54.6
19–20	0.00138	97,647	134	97,580	5,241,902	53.7
20–21	0.00153	97,513	149	97,438	5,144,323	52.8
21–22	0.00169	97,364	164	97,282	5,046,884	51.8
22–23	0.00181	97,200	176	97,112	4,949,603	50.9
23–24	0.00187	97,024	181	96,933	4,852,491	50.0
24–25	0.00188	96,843	182	96,752	4,755,557	49.1
25–26	0.00188	96,661	182	96,570	4,658,806	48.2
26–27	0.00189	96,479	183	96,388	4,562,236	47.3
27–28	0.00192	96,296	185	96,204	4,465,848	46.4
28–29	0.00198	96,111	190	96,016	4,369,645	45.5
29–30	0.00206	95,921	197	95,823	4,273,628	44.6
30–31	0.00214	95,724	205	95,622	4,177,806	43.6
31–32	0.00222	95,519	213	95,413	4,082,184	42.7
32–33	0.00234	95,307	223	95,195	3,986,771	41.8
33–34	0.00250	95,084	238	94,965	3,891,576	40.9
34–35	0.00268	94,846	254	94,719	3,796,611	40.0
35–36	0.00288	94,592	272	94,455	3,701,892	39.1
36–37	0.00308	94,319	291	94,174	3,607,437	38.2
37–38	0.00330	94,028	310	93,873	3,513,263	37.4
38–39	0.00353	93,719	330	93,553	3,419,390	36.5
39–40	0.00378	93,388	353	93,212	3,325,836	35.6
40–41	0.00404	93,035	376	92,848	3,232,624	34.7
41–42	0.00433	92,660	401	92,459	3,139,777	33.9
42–43	0.00467	92,258	431	92,043	3,047,318	33.0
43–44	0.00507	91,828	466	91,595	2,955,275	32.2
44–45	0.00554	91,362	506	91,109	2,863,680	31.3
45–46	0.00607	90,856	552	90,580	2,772,571	30.5
46–47	0.00663	90,304	599	90,005	2,681,991	29.7
47–48	0.00718	89,705	644	89,383	2,591,987	28.9
48–49	0.00766	89,061	682	88,720	2,502,604	28.1
49–50	0.00811	88,379	717	88,021	2,413,883	27.3
50–51	0.00861	87,662	755	87,285	2,325,862	26.5
51–52	0.00921	86,908	801	86,507	2,238,577	25.8
52–53	0.00989	86,107	852	85,681	2,152,070	25.0
53–54	0.01063	85,255	906	84,802	2,066,389	24.2
54–55	0.01142	84,349	963	83,867	1,981,587	23.5
55–56	0.01221	83,386	1,018	82,877	1,897,720	22.8
56–57	0.01306	82,368	1,076	81,830	1,814,843	22.0
57–58	0.01406	81,292	1,143	80,721	1,733,013	21.3
58–59	0.01529	80,149	1,225	79,536	1,652,292	20.6
59–60	0.01672	78,924	1,319	78,264	1,572,756	19.9
60–61	0.01835	77,604	1,424	76,892	1,494,492	19.3
61–62	0.02001	76,180	1,524	75,418	1,417,600	18.6
62–63	0.02147	74,656	1,603	73,855	1,342,182	18.0
63–64	0.02255	73,053	1,647	72,230	1,268,327	17.4
64–65	0.02333	71,406	1,666	70,573	1,196,097	16.8
65–66	0.02388	69,740	1,665	68,907	1,125,524	16.1
66–67	0.02459	68,075	1,674	67,238	1,056,617	15.5

Table 7. Life table for the black population: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.02591	66,401	1,721	65,540	989,380	14.9
68–69	0.02823	64,680	1,826	63,767	923,839	14.3
69–70	0.03148	62,854	1,979	61,864	860,072	13.7
70–71	0.03544	60,875	2,157	59,796	798,208	13.1
71–72	0.03949	58,718	2,319	57,558	738,412	12.6
72–73	0.04322	56,399	2,438	55,180	680,854	12.1
73–74	0.04598	53,961	2,481	52,720	625,674	11.6
74–75	0.04787	51,480	2,465	50,247	572,953	11.1
75–76	0.04949	49,015	2,426	47,802	522,706	10.7
76–77	0.05150	46,590	2,399	45,390	474,904	10.2
77–78	0.05406	44,190	2,389	42,996	429,514	9.7
78–79	0.05770	41,801	2,412	40,595	386,518	9.2
79–80	0.06253	39,389	2,463	38,158	345,923	8.8
80–81	0.06825	36,926	2,520	35,666	307,765	8.3
81–82	0.07450	34,406	2,563	33,124	272,099	7.9
82–83	0.08142	31,843	2,593	30,546	238,975	7.5
83–84	0.08863	29,250	2,592	27,954	208,428	7.1
84–85	0.09600	26,658	2,559	25,378	180,474	6.8
85–86	0.10275	24,099	2,476	22,860	155,096	6.4
86–87	0.10989	21,622	2,376	20,434	132,236	6.1
87–88	0.11754	19,246	2,262	18,115	111,801	5.8
88–89	0.12572	16,984	2,135	15,916	93,686	5.5
89–90	0.13446	14,849	1,997	13,850	77,770	5.2
90–91	0.14369	12,852	1,847	11,929	63,919	5.0
91–92	0.15333	11,005	1,687	10,162	51,991	4.7
92–93	0.16330	9,318	1,522	8,557	41,829	4.5
93–94	0.17356	7,796	1,353	7,120	33,272	4.3
94–95	0.18408	6,443	1,186	5,850	26,152	4.1
95–96	0.19486	5,257	1,024	4,745	20,302	3.9
96–97	0.20590	4,233	872	3,797	15,557	3.7
97–98	0.21721	3,361	730	2,996	11,760	3.5
98–99	0.22879	2,631	602	2,330	8,763	3.3
99–100	0.24062	2,029	488	1,785	6,433	3.2
100+	1.00000	1,541	1,541	4,648	4,648	3.0

Table 8. Life table for black males: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.01549	100,000	1,549	98,657	6,715,423	67.2
1–2	0.00105	98,451	103	98,399	6,616,766	67.2
2–3	0.00069	98,348	68	98,314	6,518,367	66.3
3–4	0.00058	98,280	57	98,251	6,420,053	65.3
4–5	0.00039	98,223	39	98,203	6,321,802	64.4
5–6	0.00038	98,184	37	98,165	6,223,599	63.4
6–7	0.00035	98,147	35	98,129	6,125,434	62.4
7–8	0.00032	98,112	32	98,096	6,027,304	61.4
8–9	0.00028	98,080	28	98,066	5,929,208	60.5
9–10	0.00023	98,052	23	98,041	5,831,142	59.5
10–11	0.00018	98,030	18	98,021	5,733,101	58.5
11–12	0.00018	98,012	18	98,003	5,635,080	57.5
12–13	0.00028	97,994	27	97,980	5,537,077	56.5
13–14	0.00049	97,967	48	97,943	5,439,097	55.5
14–15	0.00079	97,918	77	97,880	5,341,154	54.5
15–16	0.00111	97,841	109	97,787	5,243,274	53.6
16–17	0.00140	97,732	137	97,664	5,145,488	52.6
17–18	0.00167	97,595	163	97,514	5,047,824	51.7
18–19	0.00192	97,432	187	97,338	4,950,310	50.8
19–20	0.00215	97,245	209	97,141	4,852,972	49.9
20–21	0.00241	97,036	234	96,919	4,755,831	49.0
21–22	0.00268	96,802	259	96,672	4,658,912	48.1
22–23	0.00287	96,543	277	96,404	4,562,240	47.3
23–24	0.00294	96,265	283	96,124	4,465,836	46.4
24–25	0.00292	95,982	280	95,842	4,369,712	45.5
25–26	0.00285	95,702	273	95,565	4,273,870	44.7
26–27	0.00281	95,429	269	95,294	4,178,305	43.8
27–28	0.00281	95,160	267	95,027	4,083,011	42.9
28–29	0.00285	94,893	271	94,758	3,987,984	42.0
29–30	0.00294	94,623	278	94,483	3,893,226	41.1
30–31	0.00304	94,344	287	94,201	3,798,743	40.3
31–32	0.00314	94,058	295	93,910	3,704,541	39.4
32–33	0.00327	93,763	306	93,610	3,610,631	38.5
33–34	0.00343	93,456	321	93,296	3,517,022	37.6
34–35	0.00362	93,136	338	92,967	3,423,726	36.8
35–36	0.00383	92,798	356	92,620	3,330,759	35.9
36–37	0.00406	92,443	375	92,255	3,238,138	35.0
37–38	0.00431	92,068	397	91,869	3,145,883	34.2
38–39	0.00460	91,671	422	91,460	3,054,014	33.3
39–40	0.00494	91,249	450	91,024	2,962,554	32.5
40–41	0.00529	90,799	481	90,558	2,871,530	31.6
41–42	0.00568	90,318	513	90,062	2,780,972	30.8
42–43	0.00615	89,805	552	89,529	2,690,910	30.0
43–44	0.00672	89,253	599	88,953	2,601,381	29.1
44–45	0.00738	88,654	654	88,326	2,512,428	28.3
45–46	0.00815	87,999	717	87,641	2,424,101	27.5
46–47	0.00897	87,282	783	86,891	2,336,460	26.8
47–48	0.00974	86,499	842	86,078	2,249,570	26.0
48–49	0.01040	85,657	891	85,211	2,163,492	25.3
49–50	0.01098	84,766	931	84,301	2,078,280	24.5
50–51	0.01161	83,835	974	83,348	1,993,980	23.8
51–52	0.01238	82,862	1,026	82,349	1,910,632	23.1
52–53	0.01325	81,836	1,084	81,294	1,828,283	22.3
53–54	0.01422	80,751	1,148	80,177	1,746,989	21.6
54–55	0.01526	79,603	1,214	78,996	1,666,812	20.9
55–56	0.01630	78,389	1,278	77,750	1,587,816	20.3
56–57	0.01740	77,112	1,342	76,440	1,510,066	19.6
57–58	0.01872	75,769	1,418	75,060	1,433,625	18.9
58–59	0.02034	74,351	1,513	73,595	1,358,565	18.3
59–60	0.02225	72,838	1,621	72,028	1,284,970	17.6
60–61	0.02443	71,218	1,740	70,348	1,212,942	17.0
61–62	0.02664	69,478	1,851	68,553	1,142,594	16.4
62–63	0.02853	67,627	1,929	66,663	1,074,042	15.9
63–64	0.02981	65,698	1,959	64,719	1,007,379	15.3
64–65	0.03063	63,739	1,952	62,763	942,660	14.8
65–66	0.03109	61,787	1,921	60,826	879,897	14.2
66–67	0.03176	59,866	1,901	58,915	819,071	13.7

Table 8. Life table for black males: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.03318	57,965	1,923	57,003	760,155	13.1
68–69	0.03587	56,041	2,010	55,036	703,153	12.5
69–70	0.03978	54,031	2,149	52,956	648,117	12.0
70–71	0.04461	51,882	2,314	50,724	595,160	11.5
71–72	0.04963	49,567	2,460	48,337	544,436	11.0
72–73	0.05439	47,107	2,562	45,826	496,099	10.5
73–74	0.05802	44,545	2,585	43,253	450,272	10.1
74–75	0.06056	41,961	2,541	40,690	407,019	9.7
75–76	0.06278	39,419	2,475	38,182	366,330	9.3
76–77	0.06548	36,945	2,419	35,735	328,148	8.9
77–78	0.06866	34,525	2,370	33,340	292,413	8.5
78–79	0.07293	32,155	2,345	30,982	259,072	8.1
79–80	0.07854	29,810	2,341	28,639	228,090	7.7
80–81	0.08545	27,469	2,347	26,295	199,451	7.3
81–82	0.09327	25,121	2,343	23,950	173,156	6.9
82–83	0.10191	22,778	2,321	21,618	149,206	6.6
83–84	0.11035	20,457	2,257	19,328	127,588	6.2
84–85	0.11807	18,200	2,149	17,125	108,260	5.9
85–86	0.12545	16,051	2,014	15,044	91,134	5.7
86–87	0.13309	14,037	1,868	13,103	76,091	5.4
87–88	0.14110	12,169	1,717	11,310	62,988	5.2
88–89	0.14950	10,452	1,563	9,671	51,677	4.9
89–90	0.15825	8,889	1,407	8,186	42,007	4.7
90–91	0.16727	7,483	1,252	6,857	33,821	4.5
91–92	0.17647	6,231	1,100	5,681	26,964	4.3
92–93	0.18577	5,131	953	4,655	21,283	4.1
93–94	0.19507	4,178	815	3,771	16,628	4.0
94–95	0.20432	3,363	687	3,019	12,857	3.8
95–96	0.21351	2,676	571	2,390	9,838	3.7
96–97	0.22268	2,105	469	1,870	7,448	3.5
97–98	0.23184	1,636	379	1,446	5,577	3.4
98–99	0.24099	1,257	303	1,105	4,131	3.3
99–100	0.25013	954	239	835	3,026	3.2
100+	1.00000	715	715	2,191	2,191	3.1

Table 9. Life table for black females: United States, 1997

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
0–1	0.01283	100,000	1,283	98,882	7,473,657	74.7
1–2	0.00080	98,717	79	98,678	7,374,775	74.7
2–3	0.00055	98,638	54	98,611	7,276,097	73.8
3–4	0.00039	98,584	38	98,565	7,177,486	72.8
4–5	0.00032	98,545	31	98,530	7,078,922	71.8
5–6	0.00033	98,514	33	98,498	6,980,392	70.9
6–7	0.00031	98,481	30	98,466	6,881,894	69.9
7–8	0.00029	98,451	28	98,437	6,783,428	68.9
8–9	0.00026	98,423	26	98,410	6,684,991	67.9
9–10	0.00024	98,397	24	98,385	6,586,581	66.9
10–11	0.00023	98,373	23	98,362	6,488,196	66.0
11–12	0.00022	98,350	22	98,339	6,389,835	65.0
12–13	0.00023	98,328	23	98,317	6,291,495	64.0
13–14	0.00027	98,305	27	98,292	6,193,179	63.0
14–15	0.00032	98,279	32	98,263	6,094,887	62.0
15–16	0.00038	98,247	38	98,228	5,996,624	61.0
16–17	0.00044	98,210	43	98,188	5,898,395	60.1
17–18	0.00050	98,166	49	98,142	5,800,208	59.1
18–19	0.00054	98,118	53	98,091	5,702,066	58.1
19–20	0.00059	98,064	58	98,035	5,603,975	57.1
20–21	0.00064	98,006	63	97,975	5,505,940	56.2
21–22	0.00070	97,944	69	97,910	5,407,964	55.2
22–23	0.00076	97,875	75	97,838	5,310,055	54.3
23–24	0.00083	97,800	81	97,760	5,212,217	53.3
24–25	0.00089	97,719	87	97,676	5,114,457	52.3
25–26	0.00096	97,632	94	97,585	5,016,782	51.4
26–27	0.00104	97,538	101	97,487	4,919,197	50.4
27–28	0.00111	97,437	108	97,383	4,821,709	49.5
28–29	0.00118	97,329	115	97,271	4,724,327	48.5
29–30	0.00126	97,214	122	97,153	4,627,055	47.6
30–31	0.00133	97,091	129	97,027	4,529,903	46.7
31–32	0.00141	96,962	137	96,894	4,432,876	45.7
32–33	0.00153	96,825	148	96,751	4,335,982	44.8
33–34	0.00168	96,677	162	96,596	4,239,231	43.8
34–35	0.00185	96,515	179	96,426	4,142,635	42.9
35–36	0.00204	96,337	196	96,239	4,046,209	42.0
36–37	0.00222	96,141	213	96,034	3,949,970	41.1
37–38	0.00240	95,928	230	95,813	3,853,936	40.2
38–39	0.00257	95,698	246	95,575	3,758,123	39.3
39–40	0.00275	95,452	262	95,320	3,662,549	38.4
40–41	0.00293	95,189	279	95,049	3,567,228	37.5
41–42	0.00314	94,910	298	94,761	3,472,179	36.6
42–43	0.00337	94,612	319	94,453	3,377,418	35.7
43–44	0.00364	94,293	343	94,122	3,282,965	34.8
44–45	0.00394	93,950	371	93,765	3,188,844	33.9
45–46	0.00429	93,579	401	93,379	3,095,079	33.1
46–47	0.00465	93,178	434	92,961	3,001,700	32.2
47–48	0.00502	92,744	465	92,512	2,908,739	31.4
48–49	0.00537	92,279	496	92,031	2,816,227	30.5
49–50	0.00573	91,783	526	91,521	2,724,196	29.7
50–51	0.00613	91,258	560	90,978	2,632,675	28.8
51–52	0.00661	90,698	600	90,398	2,541,697	28.0
52–53	0.00715	90,098	645	89,776	2,451,299	27.2
53–54	0.00773	89,454	692	89,108	2,361,523	26.4
54–55	0.00834	88,762	740	88,392	2,272,415	25.6
55–56	0.00896	88,022	788	87,628	2,184,023	24.8
56–57	0.00963	87,234	840	86,814	2,096,395	24.0
57–58	0.01042	86,394	900	85,944	2,009,581	23.3
58–59	0.01136	85,494	972	85,008	1,923,637	22.5
59–60	0.01246	84,522	1,053	83,996	1,838,630	21.8
60–61	0.01371	83,469	1,144	82,897	1,754,634	21.0
61–62	0.01500	82,324	1,235	81,707	1,671,737	20.3
62–63	0.01618	81,089	1,312	80,433	1,590,030	19.6
63–64	0.01710	79,778	1,364	79,095	1,509,597	18.9
64–65	0.01785	78,413	1,399	77,714	1,430,502	18.2
65–66	0.01842	77,014	1,419	76,304	1,352,788	17.6
66–67	0.01915	75,595	1,448	74,871	1,276,483	16.9

Table 9. Life table for black females: United States, 1997—Con.

Age	Proportion dying during age interval	Number living at beginning of age interval	Number dying during age interval	Stationary population in the age interval	Stationary population in this and all subsequent age intervals	Life expectancy at beginning of age interval
	q_x	l_x	d_x	L_x	T_x	e_x
67–68	0.02041	74,147	1,513	73,391	1,201,612	16.2
68–69	0.02251	72,634	1,635	71,817	1,128,222	15.5
69–70	0.02538	70,999	1,802	70,098	1,056,405	14.9
70–71	0.02883	69,197	1,995	68,200	986,307	14.3
71–72	0.03236	67,202	2,174	66,115	918,107	13.7
72–73	0.03553	65,028	2,310	63,873	851,991	13.1
73–74	0.03782	62,718	2,372	61,531	788,119	12.6
74–75	0.03938	60,345	2,376	59,157	726,587	12.0
75–76	0.04068	57,969	2,358	56,790	667,430	11.5
76–77	0.04236	55,611	2,356	54,433	610,640	11.0
77–78	0.04470	53,255	2,381	52,065	556,207	10.4
78–79	0.04821	50,874	2,453	49,648	504,143	9.9
79–80	0.05292	48,422	2,562	47,140	454,495	9.4
80–81	0.05843	45,859	2,679	44,519	407,354	8.9
81–82	0.06434	43,180	2,778	41,791	362,835	8.4
82–83	0.07088	40,402	2,864	38,970	321,044	7.9
83–84	0.07786	37,538	2,923	36,077	282,074	7.5
84–85	0.08527	34,615	2,952	33,140	245,997	7.1
85–86	0.09233	31,664	2,924	30,202	212,858	6.7
86–87	0.10001	28,740	2,874	27,303	182,656	6.4
87–88	0.10828	25,866	2,801	24,465	155,353	6.0
88–89	0.11714	23,065	2,702	21,714	130,888	5.7
89–90	0.12658	20,363	2,578	19,074	109,174	5.4
90–91	0.13657	17,786	2,429	16,571	90,099	5.1
91–92	0.14704	15,357	2,258	14,228	73,528	4.8
92–93	0.15795	13,098	2,069	12,064	59,301	4.5
93–94	0.16927	11,030	1,867	10,096	47,237	4.3
94–95	0.18094	9,163	1,658	8,334	37,140	4.1
95–96	0.19295	7,505	1,448	6,781	28,807	3.8
96–97	0.20526	6,057	1,243	5,435	22,026	3.6
97–98	0.21787	4,813	1,049	4,289	16,591	3.4
98–99	0.23075	3,765	869	3,330	12,302	3.3
99–100	0.24387	2,896	706	2,543	8,972	3.1
100+	1.00000	2,190	2,190	6,429	6,429	2.9

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
All races											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,277	99,064	98,740	97,998	97,407	97,024	95,290	94,028	92,515	88,538	87,552
5	99,135	98,877	98,495	97,668	96,998	96,482	94,220	91,978	83,389	83,887	81,804
10	99,043	98,766	98,347	97,460	96,765	96,177	93,710	91,106	88,129	82,458	80,052
15	98,929	98,635	98,196	97,261	96,551	95,885	93,235	90,385	87,144	81,506	78,963
20	98,558	98,215	97,741	96,716	96,111	95,366	92,435	89,089	85,441	80,074	77,239
25	98,073	97,671	97,110	96,000	95,517	94,676	91,335	87,269	83,146	78,046	74,768
30	97,574	97,070	96,477	95,307	94,905	93,919	90,078	85,302	80,642	75,779	72,043
35	96,959	96,322	95,808	94,482	94,144	92,976	88,573	83,118	77,961	73,127	69,078
40	96,145	95,373	94,926	93,322	93,064	91,648	86,650	80,557	75,114	70,042	65,890
45	94,996	94,154	93,599	91,587	91,378	89,634	84,069	77,343	72,036	66,561	62,436
50	93,327	92,370	91,526	88,972	88,756	86,591	80,487	73,321	68,429	62,460	58,514
55	90,884	89,658	88,348	85,110	84,711	82,176	75,557	68,182	63,947	57,555	53,852
60	87,136	85,537	83,726	79,529	79,067	75,921	68,924	61,563	58,079	51,138	47,946
65	81,510	79,519	77,107	71,933	71,147	67,555	60,366	53,195	50,560	43,194	40,911
70	73,757	71,357	68,248	61,984	60,857	56,987	49,655	42,768	41,090	33,816	32,390
75	63,162	60,449	56,799	49,705	48,170	43,903	36,735	30,789	29,729	23,552	22,960
80	50,026	47,084	43,180	35,285	33,576	29,313	22,883	18,580	18,298	13,712	13,529
85	34,221	31,770	27,960	20,908	18,542	15,785	11,073	8,542	8,683	6,001	6,053
90	18,427	17,046	14,154	9,297	7,080	6,144	3,796	2,998	2,941	1,868	1,867
95	6,876	6,282	5,043	2,786	1,524	1,511	857	636	646	361	344
100	1,559	1,424	1,150	542	183	199	123	62	67	40	31
Male											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,205	98,961	98,607	97,755	97,087	96,661	94,762	93,440	91,745	87,505	86,426
5	99,047	98,754	98,333	97,395	96,643	96,077	93,624	91,294	88,505	82,718	80,548
10	98,947	98,627	98,160	97,151	96,375	95,726	93,054	90,346	87,184	81,249	78,775
15	98,809	98,464	97,972	96,904	96,107	95,366	92,508	89,561	86,156	80,261	77,681
20	98,293	97,854	97,316	96,126	95,491	94,695	91,617	88,220	84,440	78,792	75,984
25	97,581	97,049	96,361	95,040	94,631	93,791	90,385	86,359	82,252	76,675	73,472
30	96,875	96,166	95,430	94,072	93,826	92,861	89,009	84,346	79,890	74,378	70,747
35	96,039	95,091	94,501	92,997	92,889	91,760	87,371	82,075	77,514	71,614	67,752
40	94,978	93,761	93,345	91,541	91,572	90,207	85,246	79,357	74,432	68,297	64,447
45	93,502	92,139	91,649	89,369	89,492	87,819	82,336	75,882	71,244	64,518	60,849
50	91,379	89,865	89,007	86,070	86,199	84,158	78,254	71,518	67,553	60,118	56,736
55	88,363	86,492	84,936	81,139	81,039	78,781	72,627	65,981	62,965	54,970	51,939
60	83,809	81,378	79,012	73,958	73,887	71,246	65,142	58,909	56,917	48,343	45,895
65	77,032	73,971	70,646	64,318	64,177	61,566	55,776	50,154	49,218	40,264	38,736
70	67,780	64,107	59,681	52,296	52,244	49,950	44,588	39,516	39,668	31,023	30,217
75	55,576	51,385	46,272	38,797	38,950	36,756	31,864	27,718	28,316	21,213	21,076
80	41,374	36,749	31,810	24,921	25,300	25,237	18,995	16,172	17,128	11,942	12,084
85	25,630	21,815	18,020	13,168	12,845	11,750	8,693	7,107	7,920	5,059	5,179
90	11,991	9,878	7,732	5,107	4,609	4,197	2,787	2,283	2,527	1,502	1,508
95	3,755	2,927	2,279	1,326	970	955	586	451	556	289	262
100	720	529	423	222	117	121	78	40	62	33	22
Female											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,383	99,172	98,880	98,254	97,744	97,406	95,848	94,728	93,383	89,623	88,733
5	99,256	99,006	98,666	97,955	97,371	96,908	94,848	92,789	90,380	85,117	83,119
10	99,174	98,911	98,544	97,784	97,173	96,652	94,402	92,008	89,186	83,728	81,390
15	99,083	98,814	98,432	97,636	97,016	96,431	94,000	91,364	88,247	82,813	80,307
20	98,868	98,597	98,184	97,331	96,756	96,066	93,293	90,116	86,556	81,418	78,555
25	98,624	98,325	97,883	96,966	96,418	95,583	92,322	88,328	84,135	79,481	76,119
30	98,336	98,013	97,551	96,544	95,996	94,933	91,182	86,398	81,463	77,247	73,394
35	97,945	97,596	97,140	95,966	95,409	94,206	89,810	84,304	78,713	74,719	70,463
40	97,381	97,033	96,531	95,097	94,560	93,101	88,092	81,927	75,907	71,894	67,407
45	96,561	96,222	95,570	93,793	93,265	91,469	85,856	79,041	72,954	68,755	64,121
50	95,346	94,932	94,060	91,852	91,327	89,075	82,828	75,456	69,452	65,001	60,415
55	93,471	92,881	91,760	89,066	88,451	85,694	78,708	70,832	65,099	60,392	55,908

See footnote at end of table.

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Female—Con.											
60	90,515	89,742	88,414	85,139	84,430	80,890	73,093	64,795	59,438	54,226	50,155
65	86,006	85,075	83,520	79,698	78,462	74,119	65,523	56,924	52,126	46,438	43,246
70	79,677	78,522	76,720	71,955	70,100	64,873	55,449	46,774	42,741	36,916	34,721
75	70,550	69,287	67,186	61,107	58,394	52,111	42,425	34,600	31,344	26,155	24,994
80	58,348	56,986	54,372	46,445	43,063	36,486	27,524	21,578	19,613	15,682	15,129
85	42,258	41,115	37,772	29,538	25,269	20,668	13,972	10,322	9,515	7,051	7,063
90	24,167	23,666	20,578	14,160	10,056	8,548	5,044	3,656	3,314	2,269	2,306
95	9,495	9,346	7,862	4,565	2,193	2,207	1,195	807	728	441	452
100	2,214	2,251	1,927	954	264	298	179	82	72	49	43
White											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,397	99,233	98,898	98,224	97,714	97,278	95,685	94,392	92,780	88,709	87,762
5	99,271	99,068	98,675	97,930	97,353	96,790	94,713	92,466	89,771	84,147	82,071
10	99,191	98,966	98,536	97,733	97,131	96,502	94,228	91,627	88,536	82,734	80,371
15	99,083	98,843	98,391	97,546	96,928	96,228	93,792	90,982	87,633	81,816	79,344
20	98,739	98,455	97,939	97,036	96,508	95,763	93,117	89,933	86,159	80,407	77,998
25	98,314	97,972	97,340	96,406	95,965	95,169	92,213	88,454	84,106	78,392	75,202
30	97,880	97,451	96,774	95,824	95,440	94,536	91,185	86,836	81,787	76,167	72,317
35	97,337	96,810	96,192	95,152	94,798	93,750	89,941	85,004	79,277	73,568	69,522
40	96,623	96,000	95,427	94,190	93,870	92,616	88,318	82,803	76,642	70,525	66,082
45	95,606	94,932	94,257	92,681	92,374	90,847	86,069	79,989	73,705	67,090	62,920
50	94,119	93,326	92,384	90,306	89,958	88,110	82,833	76,340	70,250	62,994	58,647
55	91,860	90,833	89,427	86,688	86,173	84,027	78,218	71,551	65,875	58,163	54,450
60	88,328	86,943	85,031	81,323	80,811	78,066	71,785	65,100	60,013	51,822	48,288
65	82,920	81,123	78,585	73,889	73,102	69,850	63,201	56,655	52,411	43,904	41,505
70	75,236	73,106	69,801	63,991	62,834	59,189	52,165	45,841	42,736	34,484	32,902
75	64,681	62,175	58,299	51,586	49,895	45,688	38,610	33,406	31,086	24,151	23,356
80	51,353	48,583	44,409	36,659	34,697	30,438	23,976	20,260	19,149	14,100	13,794
85	35,163	32,850	28,768	21,578	19,017	16,239	11,483	9,325	9,078	6,178	6,192
90	18,877	17,571	14,471	9,433	7,149	6,201	3,819	3,066	2,991	1,918	1,919
95	6,947	6,416	5,067	2,743	1,521	1,500	801	636	643	364	355
100	1,521	1,423	1,105	487	183	196	98	58	62	38	31
White male											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,333	99,138	98,769	97,994	97,408	96,931	95,188	93,768	91,975	87,674	86,655
5	99,193	98,956	98,519	97,671	97,015	96,403	94,150	91,738	88,842	82,972	80,864
10	99,103	98,839	98,357	97,441	96,758	96,069	93,601	90,810	87,530	81,519	79,109
15	98,973	98,686	98,176	97,208	96,503	95,728	93,089	90,074	86,546	80,549	78,037
20	98,507	98,134	97,525	96,480	95,908	95,104	92,293	88,904	84,997	79,116	76,376
25	97,893	97,430	96,616	95,524	95,106	94,294	91,241	87,371	83,061	77,047	73,907
30	97,281	96,662	95,783	94,716	94,401	93,489	90,132	85,707	80,888	74,810	71,219
35	96,537	95,731	94,980	93,843	93,589	92,543	88,713	83,812	78,441	72,108	68,245
40	95,595	94,586	93,984	92,631	92,427	91,173	86,880	81,457	75,733	68,848	64,954
45	94,278	93,167	92,494	90,725	90,533	89,002	84,285	78,345	72,696	65,115	61,369
50	92,384	91,124	90,105	87,690	87,424	85,601	80,521	74,288	69,107	60,741	57,274
55	89,600	88,022	86,303	83,001	82,463	80,496	75,156	68,981	64,574	55,622	52,491
60	85,314	83,182	80,625	75,969	75,485	73,172	67,787	61,933	58,498	48,987	46,452
65	78,788	75,962	72,393	66,343	65,834	63,541	58,305	52,964	50,663	40,862	39,245
70	69,556	66,181	61,384	54,138	53,825	51,735	46,739	41,880	40,873	31,527	30,640
75	57,282	53,308	47,712	40,324	40,207	38,104	33,404	29,471	29,205	21,585	21,387
80	42,767	38,245	32,788	25,885	25,993	24,005	19,860	17,221	17,655	12,160	12,266
85	26,491	22,720	18,538	13,527	13,065	12,015	9,013	7,572	8,154	5,145	5,252
90	12,311	10,214	7,891	5,125	4,600	4,209	2,812	2,356	2,568	1,523	1,523
95	3,763	2,988	2,279	1,274	956	942	552	461	556	289	263
100	677	523	404	189	115	118	65	40	61	31	22

See footnote at end of table.

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
White female											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,464	99,333	99,035	98,468	98,036	97,645	96,211	95,037	93,608	89,774	88,939
5	99,353	99,187	98,841	98,203	97,709	97,199	95,309	93,216	90,721	85,349	83,426
10	99,283	99,099	98,725	98,042	97,525	96,960	94,890	92,466	89,564	83,979	81,723
15	99,198	99,007	98,618	97,902	97,375	96,756	94,534	91,894	88,712	83,093	80,680
20	98,986	98,795	98,374	97,618	97,135	96,454	93,984	90,939	87,281	81,750	78,978
25	98,764	98,547	98,093	97,299	96,844	96,072	93,228	89,524	85,163	79,865	76,588
30	98,516	98,283	97,802	96,945	96,499	95,605	92,320	87,972	82,740	77,676	73,887
35	98,180	97,939	97,445	96,474	96,026	94,977	91,211	86,248	80,206	75,200	70,971
40	97,702	97,472	96,913	95,762	95,326	94,080	89,805	84,256	77,624	72,425	67,935
45	96,993	96,768	96,065	94,649	94,228	92,725	87,920	81,780	74,871	69,341	64,677
50	95,922	95,608	94,710	92,924	92,522	90,685	85,267	78,572	71,547	65,629	61,005
55	94,193	93,730	92,594	90,383	89,967	87,699	81,520	74,321	67,323	61,053	56,509
60	91,412	90,789	89,451	86,726	86,339	83,279	76,200	68,462	61,704	54,900	50,752
65	87,106	86,339	84,764	81,579	80,739	76,773	68,701	60,499	54,299	47,086	43,806
70	80,905	79,984	78,139	74,101	72,507	67,545	58,363	49,932	44,638	37,482	35,206
75	71,921	70,834	68,712	63,290	60,461	54,397	44,685	37,024	32,777	26,569	25,362
80	59,627	58,454	55,770	48,182	44,676	38,026	28,882	23,053	20,492	15,929	15,349
85	43,261	42,274	38,774	30,490	26,046	21,348	14,487	10,937	9,909	7,152	7,149
90	24,704	24,270	20,996	14,406	10,219	8,662	5,061	3,719	3,372	2,291	2,322
95	9,603	9,495	7,900	4,526	2,203	2,200	1,109	797	721	434	448
100	2,178	2,239	1,858	872	265	294	139	74	63	44	41
Black[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,582	98,187	97,885	96,731	95,732	95,407	92,584	92,035	90,379	79,784	76,609
5	98,347	97,884	97,522	96,207	95,051	94,482	90,983	89,303	86,174	70,691	66,222
10	98,199	97,720	97,322	95,928	94,745	94,060	90,339	88,258	84,690	68,437	63,410
15	98,041	97,539	97,134	95,661	94,460	93,646	89,591	87,156	83,180	66,410	61,060
20	97,513	96,925	96,652	94,887	93,880	92,738	87,839	84,386	79,641	63,165	57,931
25	96,661	95,972	95,804	93,513	92,925	91,321	85,210	80,320	74,973	59,608	54,512
30	95,724	94,809	94,680	91,934	91,699	89,584	82,194	75,962	70,492	56,112	51,287
35	94,592	93,260	93,288	89,977	90,046	87,402	78,683	71,141	65,865	52,125	48,007
40	93,035	91,239	91,439	87,304	87,766	84,478	74,466	65,974	61,244	47,866	44,518
45	90,856	88,689	88,834	83,700	84,501	80,507	69,284	59,827	56,442	43,054	40,628
50	87,662	85,285	85,044	78,938	80,172	74,976	62,702	53,141	51,422	37,800	36,103
55	83,386	80,635	79,816	72,826	73,893	67,660	54,846	45,558	45,803	32,233	31,404
60	77,604	74,335	72,913	65,250	65,795	58,593	46,318	37,654	39,418	26,046	25,698
65	69,740	66,154	64,391	56,102	56,038	48,649	37,838	30,015	32,738	19,806	20,474
70	60,875	56,192	54,617	45,785	45,434	38,616	29,654	22,505	25,585	14,021	14,960
75	49,015	44,872	43,274	34,262	34,531	28,968	21,798	15,546	18,011	9,139	9,956
80	36,926	33,149	31,711	23,710	24,815	20,003	14,408	9,589	11,376	5,158	5,750
85	24,099	21,352	19,939	15,044	15,337	12,433	8,326	4,900	5,794	2,414	2,782
90	12,852	11,646	10,713	8,087	7,195	6,394	4,077	2,044	2,317	913	1,054
95	5,257	4,729	4,463	3,252	1,777	2,010	1,557	638	689	324	296
100	1,541	1,376	1,360	1,036	214	301	399	120	129	77	57
Black male[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,451	98,023	97,703	96,394	95,301	94,911	91,772	91,268	89,499	78,065	74,674
5	98,184	97,688	97,300	95,826	94,570	93,921	90,082	88,412	85,195	68,589	64,385
10	98,030	97,501	97,061	95,497	94,234	93,453	89,393	87,311	83,768	66,377	61,730
15	97,841	97,268	96,826	95,161	93,874	92,965	88,610	86,152	82,332	64,478	59,667
20	97,036	96,301	96,132	94,053	93,108	91,941	86,968	83,621	79,057	61,426	56,733
25	95,702	94,809	94,827	91,904	91,825	90,285	84,227	79,516	74,540	57,736	53,285
30	94,344	93,070	93,125	89,584	90,270	88,327	80,979	75,083	70,344	54,073	49,867
35	92,798	90,827	91,080	86,885	88,331	85,940	77,221	70,049	65,873	49,865	46,541
40	90,799	87,948	88,490	83,441	85,744	82,832	72,780	64,710	61,353	45,414	42,989
45	87,999	84,467	84,997	78,976	82,075	78,686	67,346	58,432	56,589	40,563	39,230
50	83,835	79,984	80,065	73,282	77,239	72,891	60,495	51,748	51,880	35,427	34,766
55	78,389	74,095	73,413	66,101	70,351	65,122	52,426	44,436	46,581	29,754	29,987

See footnote at end of table.

Table 10. Survivorship by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Black male[1]—Con											
60	71,218	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65	61,787	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70	51,882	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75	39,419	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80	27,469	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85	16,051	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90	7,483	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95	2,676	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100	715	466	513	489	149	192	209	41	77	40	18
Black female[1]											
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,717	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5	98,514	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10	98,373	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15	98,247	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20	98,006	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25	97,632	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30	97,091	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35	96,337	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40	95,189	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45	93,579	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50	91,258	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55	88,022	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60	83,469	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65	77,014	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70	69,197	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75	57,969	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80	45,859	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85	31,664	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90	17,786	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95	7,505	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100	2,190	2,364	2,398	1,803	293	445	659	193	179	112	97

[1]For 1939–41 and 1949–51, data shown are for the entire nonwhite population. During these periods, life tables were not constructed for the black population. See Technical notes.

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
All races											
0	76.5	75.37	73.88	70.75	69.89	68.07	63.62	59.20	56.40	51.49	49.24
1	76.1	75.08	73.82	71.19	70.75	69.16	65.76	61.94	59.94	57.11	55.20
5	72.2	71.22	70.00	67.43	67.04	65.54	62.49	59.29	57.99	56.21	54.98
10	67.2	66.29	65.10	62.57	62.19	60.74	57.82	54.84	53.79	52.15	51.14
15	62.3	61.38	60.19	57.69	57.33	55.91	53.10	50.25	49.37	47.73	46.81
20	57.5	56.63	55.46	53.00	52.58	51.20	48.54	45.94	45.30	43.53	42.79
25	52.8	51.93	50.81	48.37	47.89	46.56	44.09	41.85	41.47	39.60	39.12
30	48.1	47.23	46.12	43.71	43.18	41.91	39.67	37.75	37.68	35.70	35.51
35	43.4	42.58	41.43	39.07	38.51	37.31	35.30	33.68	33.89	31.90	31.92
40	38.7	37.98	36.79	34.52	33.92	32.81	31.03	29.67	30.08	28.20	28.34
45	34.1	33.44	32.27	30.12	29.50	28.49	26.90	25.79	26.25	24.54	24.77
50	29.7	29.03	27.94	25.93	25.29	24.40	22.98	22.06	22.50	20.98	21.26
55	25.4	24.83	23.85	21.99	21.37	20.57	19.31	18.53	18.90	17.55	17.88
60	21.4	20.90	20.02	18.34	17.71	17.04	15.91	15.24	15.54	14.42	14.76
65	17.7	17.28	16.51	15.00	14.39	13.83	12.80	12.23	12.47	11.60	11.86
70	14.3	13.96	13.32	12.00	11.38	10.92	10.00	9.58	9.74	9.11	9.30
75	11.2	11.00	10.48	9.32	8.71	8.40	7.62	7.32	7.49	6.99	7.08
80	8.5	8.40	7.98	7.10	6.39	6.34	5.73	5.50	5.63	5.25	5.30
85	6.3	6.23	5.96	5.28	4.58	4.69	4.31	4.19	4.21	4.00	3.96
90	4.5	4.50	4.43	3.94	3.22	3.44	3.30	3.15	3.22	3.03	2.95
95	3.3	3.29	3.34	3.06	2.43	2.54	2.61	2.26	2.32	2.35	2.18
100	2.5	2.46	2.73	2.62	1.91	1.92	2.13	1.51	1.53	1.85	1.58
Male											
0	73.6	71.83	70.11	67.04	66.80	65.47	61.60	57.71	55.50	49.86	47.88
1	73.1	71.58	70.10	67.58	67.80	66.73	64.00	60.75	59.47	55.95	54.35
5	69.3	67.73	66.29	63.82	64.10	63.12	60.76	58.14	57.60	55.11	54.22
10	64.3	62.81	61.41	58.98	59.27	58.35	56.12	53.75	53.44	51.07	50.39
15	59.4	57.91	56.52	54.12	54.43	53.56	51.43	49.18	49.05	46.66	46.06
20	54.7	53.25	51.88	49.54	49.77	48.92	46.91	44.88	44.99	42.48	42.03
25	50.1	48.67	47.37	45.07	45.19	44.36	42.51	40.79	41.11	38.59	38.38
30	45.4	44.10	42.81	40.51	40.56	39.78	38.13	36.71	37.26	34.70	34.76
35	40.8	39.57	38.20	35.95	35.94	35.23	33.79	32.65	33.43	30.94	31.19
40	36.2	35.09	33.64	31.48	31.42	30.79	29.57	28.68	29.63	27.32	27.65
45	31.8	30.66	29.22	27.18	27.09	26.55	25.52	24.87	25.84	23.77	24.14
50	27.4	26.37	25.00	23.12	23.02	22.59	21.72	21.25	22.11	20.32	20.70
55	23.3	22.30	21.08	19.36	19.32	18.96	18.20	17.79	18.53	16.98	17.38
60	19.4	18.53	17.46	15.99	15.94	15.68	14.99	14.62	15.22	13.95	14.33
65	15.9	15.12	14.21	12.99	12.95	12.74	12.07	11.72	12.20	11.24	11.50
70	12.7	12.05	11.35	10.39	10.33	10.11	9.46	9.18	9.52	8.83	9.02
75	9.9	9.39	8.90	8.13	7.99	7.83	7.22	7.02	7.31	6.75	6.84
80	7.5	7.12	6.80	6.27	5.95	5.94	5.44	5.27	5.49	5.10	5.11
85	5.5	5.31	5.13	4.73	4.39	4.41	4.11	4.02	4.10	3.90	3.82
90	4.0	3.89	3.89	3.60	3.18	3.30	3.17	3.06	3.21	3.01	2.86
95	3.0	2.92	2.98	2.82	2.43	2.49	2.52	2.21	2.38	2.36	2.13
100	2.4	2.25	2.49	2.43	1.91	1.92	2.05	1.50	1.58	1.81	1.55
Female											
0	79.4	78.81	77.62	74.64	73.24	70.96	65.89	60.90	57.40	53.24	50.70
1	78.9	78.47	77.50	74.97	73.93	71.84	67.73	65.37	60.45	58.37	56.10
5	75.0	74.60	73.67	71.19	70.21	68.21	64.43	60.66	58.41	57.39	55.80
10	70.0	69.67	68.75	66.31	65.35	63.38	59.73	56.16	54.16	53.31	51.94
15	65.1	64.73	63.83	61.41	60.45	58.52	54.97	51.54	49.71	48.87	47.60
20	60.2	59.87	58.98	56.59	55.60	53.73	50.37	47.21	45.63	44.66	43.60
25	55.4	55.03	54.16	51.80	50.79	48.99	45.87	43.11	41.86	40.69	39.92
30	50.5	50.19	49.33	47.01	46.00	44.28	41.41	39.02	38.15	36.79	36.30
35	45.7	45.40	44.53	42.28	41.27	39.63	37.01	34.92	34.40	32.95	32.71
40	40.9	40.65	39.80	37.64	36.61	35.06	32.68	30.86	30.58	29.15	29.08
45	36.3	35.97	35.17	33.13	32.09	30.64	28.46	26.89	26.71	25.36	25.44
50	31.7	31.42	30.69	28.77	27.71	26.40	24.40	23.05	22.92	21.67	21.84
55	27.3	27.05	26.39	24.59	23.53	22.33	20.54	19.38	19.28	18.13	18.39

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Female—Con.											
60	23.1	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65	19.2	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70	15.5	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75	12.1	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80	9.1	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85	6.6	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90	4.7	4.73	4.66	4.14	3.25	3.54	3.39	3.24	3.23	3.05	3.04
95	3.4	3.40	3.48	3.18	2.43	2.57	2.67	2.30	2.27	2.34	2.24
100	2.5	2.52	2.81	2.69	1.91	1.93	2.17	1.52	1.48	1.91	1.61
White											
0	77.1	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1	76.6	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5	72.7	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10	67.8	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15	62.8	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20	58.0	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25	53.3	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30	48.5	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35	43.8	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40	39.1	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45	34.5	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.92
50	30.0	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55	25.6	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60	21.5	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65	17.8	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70	14.3	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75	11.2	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80	8.5	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85	6.2	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90	4.5	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95	3.2	3.25	3.25	2.92	2.43	2.53	2.45	2.22	2.28	2.29	2.16
100	2.4	2.43	2.62	2.41	1.91	1.92	1.95	1.48	1.50	1.71	1.56
White male											
0	74.3	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1	73.8	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5	69.9	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10	65.0	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15	60.0	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20	55.3	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25	50.6	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30	45.9	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35	41.3	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40	36.7	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45	32.1	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50	27.7	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55	23.5	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60	19.6	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65	16.0	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70	12.7	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75	9.9	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80	7.4	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85	5.4	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90	3.9	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95	2.9	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100	2.2	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
White female											
0	79.9	79.45	78.22	75.49	74.19	72.03	67.29	62.67	58.53	53.62	51.08
1	79.3	78.99	77.98	75.66	74.68	72.77	68.93	64.93	61.51	58.69	56.39
5	75.4	75.10	74.13	71.86	70.92	69.09	65.57	62.17	59.43	57.67	56.03
10	70.5	70.16	69.21	66.97	66.05	64.26	60.85	57.65	55.17	53.57	52.15
15	65.5	65.23	64.29	62.07	61.15	59.39	56.07	53.00	50.67	49.12	47.79
20	60.7	60.36	59.44	57.24	56.29	54.56	51.38	48.52	46.46	44.88	43.77
25	55.8	55.51	54.60	52.42	51.45	49.77	46.78	44.25	42.55	40.88	40.05
30	50.9	50.65	49.76	47.60	46.63	45.00	42.21	39.99	38.72	36.96	36.42
35	46.1	45.82	44.93	42.82	41.84	40.28	37.70	35.73	34.86	33.09	32.82
40	41.3	41.03	40.16	38.12	37.13	35.64	33.25	31.52	30.94	29.26	29.17
45	36.6	36.30	35.49	33.54	32.53	31.12	28.90	27.39	26.98	25.45	25.51
50	32.0	31.71	30.96	29.11	28.08	26.76	24.72	23.41	23.12	21.74	21.89
55	27.5	27.29	26.61	24.85	23.81	22.58	20.73	19.60	19.40	18.18	18.43
60	23.2	23.09	22.45	20.79	19.69	18.64	17.00	16.05	15.93	14.92	15.23
65	19.3	19.14	18.55	16.93	15.88	15.00	13.56	12.81	12.75	11.97	12.23
70	15.5	15.46	14.89	13.37	12.38	11.68	10.50	9.98	9.94	9.38	9.59
75	12.1	12.11	11.58	10.21	9.28	8.87	7.92	7.56	7.62	7.20	7.33
80	9.1	9.12	8.65	7.59	6.67	6.59	5.88	5.63	5.70	5.35	5.50
85	6.6	6.62	6.32	5.54	4.66	4.83	4.34	4.24	4.24	4.06	4.10
90	4.6	4.69	4.59	4.05	3.23	3.51	3.24	3.17	3.16	3.00	3.02
95	3.3	3.36	3.39	3.04	2.43	2.56	2.47	2.24	2.20	2.27	2.21
100	2.4	2.49	2.70	2.49	1.91	1.92	1.95	1.48	1.42	1.74	1.58
Black[1]											
0	71.1	69.16	68.52	64.11	63.91	60.73	53.85	48.53	47.03	35.87	33.80
1	71.1	69.43	68.99	65.27	65.75	62.65	57.15	51.71	51.01	43.84	43.00
5	67.3	65.64	65.25	61.62	62.21	59.25	54.13	49.25	49.44	45.34	45.55
10	62.4	60.75	60.38	56.79	57.41	54.50	49.50	44.80	45.26	41.74	42.46
15	57.5	55.86	55.49	51.94	52.57	49.73	44.89	40.37	41.02	38.02	39.04
20	52.8	51.19	50.75	47.34	47.88	45.19	40.73	36.62	37.72	34.86	36.03
25	48.2	46.67	46.18	43.00	43.35	40.85	36.91	33.32	34.91	31.72	33.04
30	43.6	42.22	41.69	38.70	38.89	36.59	33.17	30.07	31.98	28.43	29.96
35	39.1	37.87	37.28	34.48	34.56	32.44	29.53	26.94	29.07	25.39	26.82
40	34.7	33.65	32.98	30.46	30.39	28.48	26.06	23.82	26.07	22.41	23.73
45	30.5	29.55	28.87	26.65	26.46	24.75	22.82	20.97	23.17	19.58	20.67
50	26.5	25.62	25.03	23.11	22.74	21.38	19.94	18.22	20.17	16.84	17.95
55	22.8	21.95	21.50	19.83	19.45	18.41	17.43	15.80	17.33	14.33	15.23
60	19.3	18.59	18.29	16.83	16.53	15.87	15.18	13.62	14.72	12.16	13.06
65	16.1	15.56	15.37	14.16	13.96	13.59	13.02	11.49	12.22	10.22	10.87
70	13.1	12.87	12.67	11.77	11.63	11.48	10.93	9.54	9.90	8.59	8.96
75	10.7	10.48	10.32	9.89	9.52	9.48	8.97	7.84	8.00	7.08	7.24
80	8.3	8.30	8.17	8.20	7.28	7.62	7.31	6.19	6.22	5.80	5.79
85	6.4	6.51	6.54	6.54	5.27	5.79	5.91	4.92	4.88	4.80	4.56
90	5.0	4.94	5.13	5.09	3.48	3.97	4.64	3.83	3.84	4.26	3.60
95	3.9	3.82	4.08	4.28	2.43	2.70	3.51	2.83	2.90	3.31	2.82
100	3.0	2.91	3.58	3.93	1.91	1.94	2.57	1.87	1.94	2.27	2.18
Black male[1]											
0	67.2	64.47	64.10	60.00	61.48	58.91	52.26	47.55	47.14	34.05	32.54
1	67.2	64.76	64.60	61.24	63.50	61.06	55.93	51.08	51.63	42.53	42.46
5	63.4	60.98	60.86	57.60	59.98	57.69	52.95	48.69	50.18	44.25	45.06
10	58.5	56.09	56.01	52.79	55.19	52.96	48.34	44.27	45.99	40.65	41.90
15	53.6	51.22	51.14	47.96	50.39	48.23	43.74	39.83	41.75	36.77	38.26
20	49.0	46.71	46.48	43.49	45.78	43.73	39.52	35.95	38.36	33.46	35.11
25	44.7	42.40	42.09	39.45	41.38	39.49	35.72	32.67	35.54	30.44	32.21
30	40.3	38.14	37.81	35.40	37.05	35.31	32.05	29.45	32.51	27.33	29.25
35	35.9	34.02	33.60	31.42	32.81	31.21	28.48	26.39	29.54	24.42	26.16
40	31.6	30.05	29.51	27.61	28.72	27.29	25.06	23.36	26.53	21.57	23.12
45	27.5	26.18	25.61	24.03	24.89	23.59	21.88	20.59	23.55	18.85	20.09
50	23.8	22.50	22.03	20.69	21.28	20.25	19.06	17.92	20.47	16.21	17.34
55	20.3	19.08	18.79	17.66	18.11	17.36	16.60	15.46	17.50	13.82	14.69

See footnote at end of table.

Table 11. Life expectancy by age, race, and sex: Death-registration States, 1900–1902 to 1919–21, and United States, 1929–31 to 1997—Con.

[Alaska and Hawaii included beginning in 1959. For decennial periods prior to 1929–31, data are for groups of registration States as follows: 1900–1902 and 1909–11, 10 States and the District of Columbia; 1919–21, 34 States and the District of Columbia. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Age, race, and sex	Number of survivors out of 100,000 born alive (l_x)										
	1997	1989–91	1979–81	1969–71	1959–61	1949–51	1939–41	1929–31	1919–21	1909–11	1900–1902
Black male[1]											
60	17.0	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65	14.2	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70	11.5	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75	9.3	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80	7.3	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85	5.7	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90	4.5	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95	3.7	3.37	3.62	3.92	2.43	2.64	3.20	2.54	2.61	3.15	2.50
100	3.1	2.63	3.24	3.61	1.91	1.93	2.29	1.68	1.64	2.14	1.89
Black female[1]											
0	74.7	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1	74.7	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5	70.9	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10	66.0	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15	61.0	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20	56.2	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25	51.4	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30	46.7	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35	42.0	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40	37.5	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45	33.1	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50	28.8	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55	24.8	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60	21.0	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65	17.6	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70	14.3	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75	11.5	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80	8.9	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85	6.7	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90	5.1	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95	3.8	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100	2.9	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

[1]For 1939–41 and 1949–51, data shown are for the entire nonwhite population. During these periods, life tables See Technical notes

Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–97

[For selected years, life table values shown are estimates; see Technical notes. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Area and year	All races			White			Black[4]		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States[1]									
1997	76.5	73.6	79.4	77.2	74.3	79.9	71.1	67.2	74.7
1996	76.1	73.1	79.1	76.8	73.9	79.7	70.2	66.1	74.2
1995	75.8	72.5	78.9	76.5	73.4	79.6	69.6	65.2	73.9
1994	75.7	72.4	79.0	76.5	73.3	79.6	69.5	64.9	73.9
1993	75.5	72.2	78.8	76.3	73.1	79.5	69.2	64.6	73.7
1992	75.8	72.3	79.1	76.5	73.2	79.8	69.6	65.0	73.9
1991	75.5	72.0	78.9	76.3	72.9	79.6	69.3	64.6	73.8
1990	75.4	71.8	78.8	76.1	72.7	79.4	69.1	64.5	73.6
1989	75.1	71.7	78.5	75.9	72.5	79.2	68.8	64.3	73.3
1988	74.9	71.4	78.3	75.6	72.2	78.9	68.9	64.4	73.2
1987	74.9	71.4	78.3	75.6	72.1	78.9	69.1	64.7	73.4
1986	74.7	71.2	78.2	75.4	71.9	78.8	69.1	64.8	73.4
1985	74.7	71.1	78.2	75.3	71.8	78.7	69.3	65.0	73.4
1984	74.7	71.1	78.2	75.3	71.8	78.7	69.5	65.3	73.6
1983	74.6	71.0	78.1	75.2	71.6	78.7	69.4	65.2	73.5
1982	74.5	70.8	78.1	75.1	71.5	78.7	69.4	65.1	73.6
1981	74.1	70.4	77.8	74.8	71.1	78.4	68.9	64.5	73.2
1980	73.7	70.0	77.4	74.4	70.7	78.1	68.1	63.8	72.5
1979	73.9	70.0	77.8	74.6	70.8	78.4	68.5	64.0	72.9
1978	73.5	69.6	77.3	74.1	70.4	78.0	68.1	63.7	72.4
1977	73.3	69.5	77.2	74.0	70.2	77.9	67.7	63.4	72.0
1976	72.9	69.1	76.8	73.6	69.9	77.5	67.2	62.9	71.6
1975	72.6	68.8	76.6	73.4	69.5	77.3	66.8	62.4	71.3
1974	72.0	68.2	75.9	72.8	69.0	76.7	66.0	61.7	70.3
1973	71.4	67.6	75.3	72.2	68.5	76.1	65.0	60.9	69.3
1972[2]	71.2	67.4	75.1	72.0	68.3	75.9	64.7	60.4	69.1
1971	71.1	67.4	75.0	72.0	68.3	75.8	64.6	60.5	68.9
1970	70.8	67.1	74.7	71.7	68.0	75.6	64.1	60.0	68.3
1969	70.5	66.8	74.4	71.4	67.7	75.3	64.5	60.6	68.6
1968	70.2	66.6	74.1	71.1	67.5	75.0	64.1	60.4	67.9
1967	70.5	67.0	74.3	71.4	67.8	75.2	64.9	61.4	68.5
1966	70.2	66.7	73.9	71.1	67.5	74.8	64.2	60.9	67.6
1965	70.2	66.8	73.8	71.1	67.6	74.8	64.3	61.2	67.6
1964	70.2	66.8	73.7	71.0	67.7	74.7	64.2	61.3	67.3
1963[3]	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6
1962[3]	70.1	66.9	73.5	70.9	67.7	74.5	64.2	61.6	66.9
1961	70.2	67.1	73.6	71.0	67.8	74.6	64.5	62.0	67.1
1960	69.7	66.6	73.1	70.6	67.4	74.1	63.6	61.1	66.3
1959	69.9	66.8	73.2	70.7	67.5	74.2	63.9	61.3	66.5
1958	69.6	66.6	72.9	70.5	67.4	73.9	63.4	61.0	65.8
1957	69.5	66.4	72.7	70.3	67.2	73.7	63.0	60.7	65.5
1956	69.7	66.7	72.9	70.5	67.5	73.9	63.6	61.3	66.1
1955	69.6	66.7	72.8	70.5	67.4	73.7	63.7	61.4	66.1
1954	69.6	66.7	72.8	70.5	67.5	73.7	63.4	61.1	65.9
1953	68.8	66.0	72.0	69.7	66.8	73.0	62.0	59.7	64.5
1952	68.6	65.8	71.6	69.5	66.6	72.6	61.4	59.1	63.8
1951	68.4	65.6	71.4	69.3	66.5	72.4	61.2	59.2	63.4
1950	68.2	65.6	71.1	69.1	66.5	72.2	60.8	59.1	62.9
1949	68.0	65.2	70.7	68.8	66.2	71.9	60.6	58.9	62.7
1948	67.2	64.6	69.9	68.0	65.5	71.0	60.0	58.1	62.5
1947	66.8	64.4	69.7	67.6	65.2	70.5	59.7	57.9	61.9
1946	66.7	64.4	69.4	67.5	65.1	70.3	59.1	57.5	61.0
1945	65.9	63.6	67.9	66.8	64.4	69.5	57.7	56.1	59.6
1944	65.2	63.6	66.8	66.2	64.5	68.4	56.6	55.8	57.7
1943	63.3	62.4	64.4	64.2	63.2	65.7	55.6	55.4	56.1
1942	66.2	64.7	67.9	67.3	65.9	69.4	56.6	55.4	58.2
1941	64.8	63.1	66.8	66.2	64.4	68.5	53.8	52.5	55.3
1940	62.9	60.8	65.2	64.2	62.1	66.6	53.1	51.5	54.9
1939	63.7	62.1	65.4	64.9	63.3	66.6	54.5	53.2	56.0
1938	63.5	61.9	65.3	65.0	63.2	66.8	52.9	51.7	54.3
1937	60.0	58.0	62.4	61.4	59.3	63.8	50.3	48.3	52.5
1936	58.5	56.6	60.6	59.8	58.0	61.9	49.0	47.0	51.4
1935	61.7	59.9	63.9	62.9	61.0	65.0	53.1	51.3	55.2

See footnotes at end of table.

Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900–28, and United States, 1929–97—Con.

[For selected years, life table values shown are estimates; see Technical notes. Beginning 1970 excludes deaths of nonresidents of the United States; see Technical notes]

Area and year	All races			White			Black[4]		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States—Con.									
1934	61.1	59.3	63.3	62.4	60.5	64.6	51.8	50.2	53.7
1933	63.3	61.7	65.1	64.3	62.7	66.3	54.7	53.5	56.0
1932	62.1	61.0	63.5	63.2	62.0	64.5	53.7	52.8	54.6
1931	61.1	59.4	63.1	62.6	60.8	64.7	50.4	49.5	51.5
1930	59.7	58.1	61.6	61.4	59.7	63.5	48.1	47.3	49.2
1929	57.1	55.8	58.7	58.6	57.2	60.3	46.7	45.7	47.8
Death-registration States									
1928	56.8	55.6	58.3	58.4	57.0	60.0	46.3	45.6	47.0
1927	60.4	59.0	62.1	62.0	60.5	63.9	48.2	47.6	48.9
1926	56.7	55.5	58.0	58.2	57.0	59.6	44.6	43.7	45.6
1925	59.0	57.6	60.6	60.7	59.3	62.4	45.7	44.9	46.7
1924	59.7	58.1	61.5	61.4	59.8	63.4	46.6	45.5	47.8
1923	57.2	56.1	58.5	58.3	57.1	59.6	48.3	47.7	48.9
1922	59.6	58.4	61.0	60.4	59.1	61.9	52.4	51.8	53.0
1921	60.8	60.0	61.8	61.8	60.8	62.9	51.5	51.6	51.3
1920	54.1	53.6	54.6	54.9	54.4	55.6	45.3	45.5	45.2
1919	54.7	53.5	56.0	55.8	54.5	57.4	44.5	44.5	44.4
1918	39.1	36.6	42.2	39.8	37.1	43.2	31.1	29.9	32.5
1917	50.9	48.4	54.0	52.0	49.3	55.3	38.8	37.0	40.8
1916	51.7	49.6	54.3	52.5	50.2	55.2	41.3	39.6	43.1
1915	54.5	52.5	56.8	55.1	53.1	57.5	38.9	37.5	40.5
1914	54.2	52.0	56.8	54.9	52.7	57.5	38.9	37.1	40.8
1913	52.5	50.3	55.0	53.0	50.8	55.7	38.4	36.7	40.3
1912	53.5	51.5	55.9	53.9	51.9	56.2	37.9	35.9	40.0
1911	52.6	50.9	54.4	53.0	51.3	54.9	36.4	34.6	38.2
1910	50.0	48.4	51.8	50.3	48.6	52.0	35.6	33.8	37.5
1909	52.1	50.5	53.8	52.5	50.9	54.2	35.7	34.2	37.3
1908	51.1	49.5	52.8	51.5	49.9	53.3	34.9	33.8	36.0
1907	47.6	45.6	49.9	48.1	46.0	50.4	32.5	31.1	34.0
1906	48.7	46.9	50.8	49.3	47.3	51.4	32.9	31.8	33.9
1905	48.7	47.3	50.2	49.1	47.6	50.6	31.3	29.6	33.1
1904	47.6	46.2	49.1	48.0	46.6	49.5	30.8	29.1	32.7
1903	50.5	49.1	52.0	50.9	49.5	52.5	33.1	31.7	34.6
1902	51.5	49.8	53.4	51.9	50.2	53.8	34.6	32.9	36.4
1901	49.1	47.6	50.6	49.4	48.0	51.0	33.7	32.2	35.3
1900	47.3	46.3	48.3	47.6	46.6	48.7	33.0	32.5	33.5

[1]Alaska included in 1959 and Hawaii in 1960.
[2]Deaths based on a 50-percent sample.
[3]Figures by race exclude data for residents of New Jersey; see Technical notes.
[4]Prior to 1970, data for the black population are not available. Data shown for 1900–69 are for the nonwhite population. See Technical notes.

Technical notes

The life table program—Three series of complete life tables are prepared by the National Center for Health Statistics for the U.S. population—decennial, annual preliminary, and annual final. The U.S. decennial life tables are based on decennial census data and deaths for a 3-year period around the census year. Preliminary life tables are based on a substantial sample (approximately 90 percent) of death records. Estimates of life expectancy from the preliminary series are published annually. The annual final life tables (referred to in this section as "annual life tables") are based on a complete count of all reported deaths.

Available since 1945, the annual life tables are based on deaths occurring during the calendar year and on midyear postcensal population estimates provided by the U.S. Bureau of the Census. From 1945 to 1996, the annual life tables were abridged life tables and were constructed by reference to a standard table (5). Beginning with 1997 mortality data, the annual life tables are complete life tables and are constructed using a methodology similar to that used to construct the decennial series (3,6). Also beginning with 1997 data, the annual life tables show life table values for ages 85 to 100 years.

Geographic coverage—The geographic areas covered in life tables before 1929–31 were limited to the death-registration areas. Life tables for 1900–1902 and 1909–11 were constructed using mortality data from the 1900 death-registration States (10 States and the District of Columbia) and for 1919–21 from the 1920 death-registration States (34 States and the District of Columbia). The tables for 1929–31 through 1958 cover the conterminous United States. Decennial life table values for the 3-year period 1959–61 were derived from data that include both Alaska and Hawaii for each year (tables 10 and 11). Data for each year shown in table 12 include Alaska beginning in 1959 and Hawaii beginning in 1960. However, it is not believed that the inclusion of these two States materially affects life table values.

Revised life table values, 1961–89—Life table values for 1960–69, 1970–79, and 1980–89 were constructed using the U.S. decennial life tables for 1959–61, 1969–71, and 1979–81, respectively, as the standard tables. The life table values for years prior to 1989 appearing in this publication are based on revised intercensal estimates of the populations for those years. As a result, the life table values for these years may differ from the life table values for those years published in *Vital Statistics of the United States* for 1989 and earlier years. Life table values for 1991 and later are based on postcensal population estimates and will be recalculated when intercensal estimates become available.

New Jersey data, 1962–64—The life tables for 1962 and 1963 for the six population groups involving race do not include data from New Jersey, which omitted the item on race from its certificates of live birth, death, and fetal death in use at the beginning of 1962. The item was restored during the latter part of 1962. However, the certificate revision without this item was used for most of 1962 as well as for 1963. For computing vital rates, populations by age, race, and sex (excluding New Jersey) were estimated to obtain comparable denominators. Approximately 7 percent of the New Jersey death records for 1964 did not contain the race designation. When the records were being electronically processed for this State, the "race not stated" deaths were proportionally allocated to white or to black.

Nonresidents—Beginning in 1970 the deaths of nonresidents of the United States have been excluded from the life table statistics.

Estimation of life table functions—For some years, it was necessary to estimate life table functions for some race-sex groups. In tables 10 and 11, figures for the black population during the periods 1949–51 and 1959–61 were estimated using figures for the nonwhite population. Life table functions were also missing in tables 10 and 11 for race-sex groups for the periods from 1900–02 to 1939–41. Figures were missing for the following groups:

Years	Race and sex
1900–1902	Total white, total black
1909–11	Total white, total black
1919–21	Total, male, female, total white, total black
1929–31	Total, male, female, total white, total black

These figures were estimated by weighted averages using population distributions as the weights. For example, life expectancy at age 20 years for the total black population was estimated by a weighted average of black male and black female life expectancies at age 20, using as weights the population distribution by sex of the black population age 20 years.

Annual life tables were initiated in 1945 for white males, white females, all other males, and all other females. The figures in table 12 by race and sex for the following years were estimated using a procedure other than the abridged life table methodology (12).

Years	Race and sex
1900–45	Total
1900–47	Male
1900–47	Female
1900–50	White
1900–44	White male
1900–44	White female

Annual life table functions were not calculated for the black population prior to 1970. In table 12, life expectancy for the black population for years prior to 1970 is estimated using figures for the total nonwhite population.

Population bases for computing life tables—The population used for computing life table values shown in this section (furnished by the U.S. Bureau of the Census) represents the resident population of the United States. The age-specific populations used for computing the 1997 life table values are based on the July 1, 1997, population estimates that are consistent with the 1990 census (13). The 1990 census counts by race and age were modified. Race was modified to be consistent with the Office of Management and Budget categories and historical categories for mortality data. The modification procedures for race and age are described in a census report (14).

Medicare data—Death rates at the oldest ages based on Medicare data are known to be more accurate than those based on vital statistics and census data. Consequently, q_x values calculated for ages 85 to 99 years are based on Medicare data prepared by the Health Care Financing Administration (HCFA). Medicare data were limited to the group insured for hospitalization as age reporting is considered best among this group (6,10,11). For the 1997 life tables, 1996 Medicare data were used as 1997 data were not available in time for the preparation of this report.

Methodology

A more detailed treatment of the methodology used to calculate these life tables is contained in a separate report (3). Calculation of the complete life table is derived from the probability of death (q_x), which depends on the number of deaths (D_x) and the midyear population (P_x) for each single year of age (x) observed during the calendar year of interest.

Adjustment for deaths for which age was not reported—An adjustment must be made to account for the small proportion of deaths each year for which age is not reported. The data are aggregated into 5-year age groups for those aged 5 years and over and into single years for those under 5 years. The number of deaths in each age category is adjusted proportionally to account for those with not-stated ages. The following factor is used to make the adjustment. This factor (F) is calculated for each race-sex group for which life tables are constructed.

$$F = \frac{D}{D^a} \qquad [1]$$

where D is the total number of deaths and D^a is the total number of deaths for which age is stated. F is then applied by multiplying it times the number of deaths in each age group. Table I shows values for F by race and sex used to adjust the 1997 mortality data.

Interpolation of P_x and D_x—Anomalies, both random and those associated with reporting age at death, can be problematic when using vital statistics and census data by single years of age to estimate the probability of death (1). Graduation techniques are often used to eliminate these anomalies and to derive a smooth curve by age. Beer's ordinary minimized fifth difference formula is used to obtain smoothed values of P_x and D_x (see reference 3 for details on the application of Beer's method).

Calculation of q_0—q_0 is calculated by using a birth cohort method employing a separation factor (f) defined as the proportion of infant deaths in year t occurring to infants born in the previous year (t-1). f can be calculated by categorizing infant deaths by date of birth. The probability of death in the first year is calculated as

$$q_0 = \frac{D_0\,(1-f)}{B^t} + \frac{D_0\,f}{B^{t-1}} \qquad [2]$$

where D_0 is the number of infant deaths adjusted for not-reported age, and B^t and B^{t-1} are the numbers of births in years t and t-1, respectively. Table II shows separation factors and numbers of births by race and sex for 1996–97.

Table I. Values for F used to adjust for not stated age based on 1997 mortality data

Race and sex	Total deaths	Total deaths for which age was not stated	F
Total	2,314,245	401	1.00017330
Male	1,154,039	317	1.00027476
Female	1,160,206	84	1.00007241
White	1,996,393	301	1.00015079
Male	986,884	249	1.00025237
Female	1,009,509	52	1.00005151
Black	276,520	90	1.00032558
Male	144,110	62	1.00043041
Female	132,410	28	1.00021151

Calculation of q_x for ages 1–84 years—q_x is calculated assuming that l_x (number of survivors at exact age x in the life table population) declines linearly between x and x+1, i.e., that deaths between exact age x and x+1 occur on average at age x+½. This simplification is generally considered acceptable when age intervals are 1 year of age in length (1). Under this assumption, $l_x = L_x + \frac{1}{2}d_x$ where L_x is the average life table population at risk of dying between ages x and x+1 and d_x is the number of deaths occurring between age x and x+1. q_x is then

$$q_x = \frac{d_x}{l_x} = \frac{d_x}{L_x + \frac{1}{2}d_x}$$

One can make the same assumption for the observed population, i.e., that the observed population aged x at risk of dying at the beginning of the year (N_x) declines linearly between ages x and x+1. Under this assumption, $N_x = P_x + \frac{1}{2}D_x$ where *P_x is the midyear population or average observed population at risk of dying between ages x* and x+1 and D_x is the observed number of deaths occurring between ages x and x+1. q_x is calculated as

$$q_x = \frac{D_x}{N_x} = \frac{D_x}{P_x + \frac{1}{2}D_x} \qquad [3]$$

For x = 1 to 4, D_x is the observed number of deaths adjusted for not-stated age and P_x is obtained by Beer's interpolation formula. For x = 5 to 84, both D_x and P_x are obtained by interpolation (3).

Use of Medicare data at ages 85 to 99 years—There is ample evidence that the rate of increase in q_x declines above age 85 (3,15,16,17). The change in q_x for ages above 85 can be expressed using the formula

$$q_x = q_{x-1} \cdot e^{k_x} \qquad [4]$$

where k_x denotes the age-specific rate of mortality change with age (14,16). Solving for k_x gives

$$k_x = \ln(q_x) - \ln(q_{x-1}) \qquad [5]$$

Values for k_x are then obtained from the Medicare data. Table III shows values for k by age, race, and sex based on 1996 Medicare data. These data show clearly a declining rate of increase in q_x above age 85. These k_x values are then used to obtain q_x values for ages 85 to 99 years using equation 4. This method allows for flexibility in cases where the Medicare data are not available in a timely fashion. In these cases, Medicare data for the previous year can be used to calculate k_x values. Finally, $_{\infty}q_{100}$ is set equal to 1.0 since all will die at some point in this open-ended age interval. Once q_x is obtained for each single year of age, the other life table functions may be easily calculated.

Survivor function (l_x)—The life table radix, l_0, is set at 100,000. For ages greater than 0, the number of survivors remaining at exact age x is calculated as

$$l_x = l_{x-1}\,(1-q_{x-1}) \qquad [6]$$

Decrement function (d_x)—The number of deaths occurring between age x and x+1 is calculated from the survivor function.

$$d_x = l_x - l_{x+1} = l_x\,q_x \qquad [7]$$

Note that $_{\infty}d_{100} = {}_{\infty}l_{100}$ since $_{\infty}q_{100} = 1.0$.

Table II. Births in 1996 and 1997, deaths in 1997 of infants born in 1996 and 1997, and separation factors by race and sex: United States

	Total			White			Black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Births									
1996	3,891,494	1,990,480	1,901,014	3,093,057	1,584,423	1,508,634	594,781	301,474	293,307
1997	3,880,894	1,985,596	1,895,298	3,072,640	1,573,622	1,499,018	599,913	304,530	295,383
Deaths in 1997 of infants born in									
1996	3,638	2,100	1,538	2,388	1,403	985	1,109	623	486
1997	24,362	13,668	10,694	16,126	9,090	7,036	7,368	4,078	3,290
Separation factor	0.130	0.133	0.126	0.129	0.134	0.123	0.131	0.133	0.129

Table III. k values by age, race, and sex based on insured Medicare data: United States, 1996

	Total			White			Black		
Age	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
84–85	0.091181	0.086271	0.102951	0.092648	0.088117	0.104382	0.068007	0.060599	0.079584
85–86	0.089378	0.082232	0.103287	0.090739	0.084212	0.104601	0.067175	0.059143	0.079864
86–87	0.089073	0.081638	0.101669	0.090431	0.083306	0.103157	0.067299	0.058438	0.079452
87–88	0.089188	0.081528	0.100561	0.090884	0.083159	0.102382	0.067281	0.057785	0.078595
88–89	0.089883	0.081237	0.099911	0.091519	0.082865	0.101556	0.067210	0.056886	0.077566
89–90	0.088905	0.079517	0.097960	0.090469	0.081326	0.099509	0.066399	0.055412	0.075960
90–91	0.085312	0.076301	0.094030	0.086929	0.078337	0.095620	0.064893	0.053592	0.073872
91–92	0.080874	0.072163	0.089441	0.082634	0.074508	0.090998	0.062984	0.051358	0.071579
92–93	0.077608	0.068083	0.085771	0.079457	0.070873	0.087331	0.060950	0.048849	0.069157
93–94	0.075690	0.064318	0.083282	0.077533	0.067502	0.084484	0.058836	0.046305	0.066721
94–95	0.073817	0.061117	0.080482	0.075469	0.064258	0.081528	0.056927	0.043998	0.064245
95–96	0.070976	0.058176	0.076681	0.072286	0.060943	0.077616	0.055101	0.042061	0.061863
96–97	0.066674	0.055203	0.071785	0.067770	0.057473	0.072691	0.053490	0.040284	0.059621
97–98	0.062023	0.052406	0.066622	0.062928	0.054140	0.067694	0.051933	0.038724	0.057419
98–99	0.057652	0.049796	0.061827	0.058566	0.051076	0.063140	0.050430	0.037244	0.055308

Stationary population (L_x)—The stationary population at ages 1 to 99 is calculated assuming that the survivor function declines linearly between age x and $x+1$. This gives the formula

$$L_x = \tfrac{1}{2}(l_x + l_{x+1}) = l_x - \tfrac{1}{2}d_x \qquad [8]$$

For $x = 0$, the separation factor f is used to calculate L_0.

$$L_0 = f\,l_0 + (1 - f)\,l_1$$

${}_{\infty}L_{100}$ is calculated by surviving the life table cohort from age 100 using equations 4, 5, and 6 until L_x at these ages is essentially zero (somewhere between ages 110 and 120). q_x for these ages can be extrapolated from the Medicare data using equation 4. However, k_x values must be estimated for these ages. k_x can be modeled as a linear function of age

$$k_x = k_{85} + (x - 85)s \qquad [9]$$

where s is the slope of the change in k_x by age and k_{85} is calculated as $[\ln(q_{88}/q_{81})]/7$ in order to minimize the effects of random fluctuations (11,17). s can be obtained by treating equation 9 as a linear regression model. Calculated values for s are shown in table IV. The predicted values for k_x are then used to calculate q_x above age 100 using equation 4. The corresponding L_x values for ages 100 and older are then summed to give ${}_{\infty}L_{100}$.

Person-years lived at and above age x (T_x)—T_x is calculated by summing L_x values at and above age x.

$$T_x = \sum_{i=0}^{\infty} L_{x+i} \qquad [10]$$

Table IV. Slope of the change in k values (s) by age, race, and sex based on 1996 Medicare data

Race and sex	s
Total, both sexes	–0.002379
Male	–0.002710
Female	–0.003031
White, both sexes	–0.001902
Male	–0.002390
Female	–0.002427
Black, both sexes	–0.001074
Male	–0.001586
Female	–0.001512

Life expectancy at age x (e_x)—Life expectancy at exact age x is calculated as

$$e_x = \frac{T_x}{l_x} \qquad [11]$$

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